



8TH GRADE

Weeks of:

APRIL 13TH & APRIL 20TH

WICHITA PUBLIC SCHOOLS

To Students, Parents and Guardians:
Week 5 and 6 Packets will be mailed
out the week of April 27th
Week 7 and 8 Packets will be mailed
out the week of May 11th.



5th, 6th, 7th and 8th Grades

Your child should spend up to 90 minutes over the course of each day on this packet.
Consider other family-friendly activities during the day such as:

Draw and discuss an imaginary amusement park.	Write and act out a family play.	Take a nature or a virtual field trip using Google Earth.	Help plan and cook a meal.
Mindful Minute: Take 3 deep breathes and focus on the sounds in the room.	Search for these YouTube learning channels: Crash Course Kids SciShow	Play a board game, charades or card game with a family member.	Do a family workout together (jog, take a walk, play basketball, etc.)

**All activities are optional. Parents/Guardians please practice responsibility, safety, and supervision.*

For students with an Individualized Education Program (IEP) who need additional support, Parents/Guardians can refer to the Specialized Instruction and Supports webpage, contact their child's IEP manager, and/or speak to the special education provider when you are contacted by them. Contact the IEP manager by emailing them directly or by contacting the school. The Specialized Instruction and Supports webpage can be accessed by clicking [HERE](#) or by navigating in a web browser to <https://www.usd259.org/Page/17540>

WICHITA PUBLIC SCHOOLS CONTINUOUS LEARNING HOTLINE AVAILABLE

316-973-4443

MARCH 30 – MAY 21, 2020

MONDAY – FRIDAY

11:00 AM – 1:00 PM **ONLY**

For Multilingual Education Services (MES) support,
please call (316) 866-8000 (Spanish and Proprio) or (316) 866-8003 (Vietnamese).

The Wichita Public Schools does not discriminate on the basis of race, color, national origin, religion, sex, gender identity, sexual orientation, disability, age, veteran status or other legally protected classifications in its programs and activities.

ELA

Week 3 and Week 4

MS ELA Grade 8 Week 3: April 13-17, 2020

Hello Parent(s)/Guardian(s) and Students,

This week’s reading and writing activities center on building vocabulary and close reading the main text of this unit. Certain sections of the text are particularly important, so additional support is found in the third bullet. Remember the writing activities correspond to the reading you have just finished. Parents, the response your child writes should reflect his/her analysis of the text so are open-ended to reflect your child’s understanding. So, there aren’t typical right/wrong answers for this. In addition, writing can provide evidence to support answering the essential question: Are inventions realized through inspiration or perspiration?

Grade 8 Unit 5 Invention: Are inventions realized through inspiration or perspiration?		
Week 3: April 13-17	p. 448 pp. 449 – 457 p.458	<ul style="list-style-type: none">● Vocabulary● Read the entire story. Mark the Text/highlight as you read. Answer questions # 1 and # 2 on p. 457.● Reread parts of the story. Fill in notes the margins as you read. Complete the Close Read questions and activities:<ul style="list-style-type: none">○ ¶ 1 on p. 449;○ ¶ 2 on p. 451;○ ¶ 3 on p. 453;○ ¶ 5 on p. 454;○ ¶ 6 on p. 456;● Answer questions # 3 and #4, and the Research to Clarify (if possible) on p. 457.● Answer Analyze the Text questions on p. 458

Grade 8 Unit 5 *Invention*

Week 3: April 13 – 17

Daily Planning Guide/Checklist/Additional Support – pp 448 - 458

Monday, April 13

_____ Look at *Concept Vocabulary* (p 448) and rank the six vocabulary words from 1 to 6. One would be the word you are most familiar and six would be the word you are least familiar.

_____ Look through the First Read Fiction chart (p 448)

_____ Take a walk through the text pp 449 – 457. Study the vocabulary words in the margins.

Look at them within the text to help your understanding.

_____ Read or preview the Close Read Notes questions in the margins (pp 449 – 457).

Tuesday, April 14

_____ Read (or have read aloud) text pp 449 – 457.

_____ In paragraph 1, highlight or underline the information which tells how Clara pictures her uncle – specifically his mustache and smile.

_____ Journal or discuss – Why does the author use those details?

_____ Journal or discuss – How do the details add to the meaning of the text or help paint a picture in the reader’s eyes?

Wednesday, April 15

_____ Re-read (or have read aloud) pages 449 and 457.

_____ On page 451, highlight or underline the sentence toward the bottom of paragraph 2 that suggests how Antonieta reacts to Marcos’s barrel-organ music.

_____ Journal or discuss – Why do you think the author provides very little description of her reaction?

_____ On page 453, highlight or underline the sentence toward the end of paragraph 3 that describes how Marcos is dressed as he waits to begin his flight.

_____ Journal or discuss – Why do you think the author talks about the details of how he is dressed?

Thursday, April 16

_____ Pick-up where you left off on page 453.

_____ On page 454, highlight or underline in paragraph 5 details that present the crystal ball as magical or mysterious.

_____ On page 454, highlight or underline in paragraph 5 details that present the crystal ball as normal, ordinary, or not magical.

_____ On page 456 in paragraph 6, highlight or underline details that relate to the senses of touch, sight and hearing.

_____ Journal or discuss – Why does the author include information about the senses of touch, sight, or hearing?

Friday, April 17

_____ Answer comprehension questions 1, 2, and 3 on page 457.

_____ Write a short summary or tell someone about the story “Uncle Marcos.”

_____ Congratulations - you’ve completed Week 3 and you’re are still awesome!!!



About the Author



Isabel Allende (b. 1942) is a Chilean American novelist, essayist, and lecturer who has been called the world's most widely read Spanish-language author. Allende's novels combine elements of myth and realism ("magical realism") and are often based on her personal experiences. In 1992, after the tragic death of her daughter, she established a foundation dedicated to the protection and empowerment of women and children worldwide. Allende became a U.S. citizen in 1993 and, in 2014, was awarded the Presidential Medal of Freedom by President Barack Obama.

Tool Kit

First-Read Guide and Model Annotation

STANDARDS

Reading Literature
By the end of the year, read and comprehend literature, including stories, dramas, and poems, at the high end of grades 6-8 text complexity band independently and proficiently.

Uncle Marcos

Concept Vocabulary

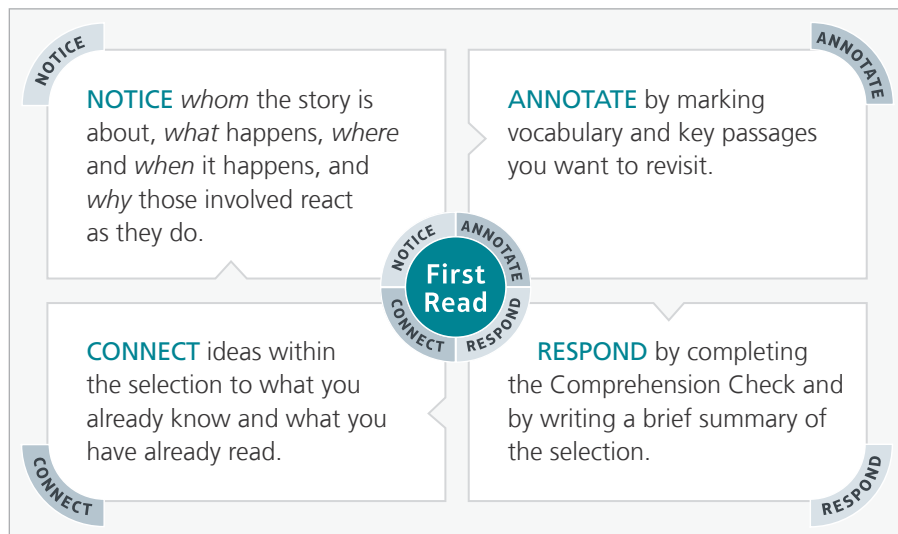
As you conduct your first read of "Uncle Marcos," you will encounter these words. Before reading, note how familiar you are with each word. Then, rank the words in order from most familiar (1) to least familiar (6).

Table with 2 columns: WORD and YOUR RANKING. Rows include: decipher, invincible, contraption, newfangled, ingenuity, improvisations.

After completing the first read, come back to the concept vocabulary and review your rankings. Mark changes to your original rankings as needed.

First Read FICTION

Apply these strategies as you conduct your first read. You will have an opportunity to complete the close-read notes after your first read.



Uncle Marcos

from *The House of the Spirits*

Isabel Allende

translated by
Magda Bogin

BACKGROUND

“Uncle Marcos” is from Isabel Allende’s first novel, which began as a letter to her 100-year-old grandfather. This excerpt draws on the Greek myth of Icarus and Daedalus. In the myth, Daedalus invents a pair of wings and teaches his son how to use them, but warns him not to fly too close to the sun because the wax in the wings would melt. Icarus is too excited to listen, and he drowns in the ocean after his wings melt.

SCAN FOR
MULTIMEDIA



1 **I**t had been two years since Clara had last seen her Uncle Marcos, but she remembered him very well. His was the only perfectly clear image she retained from her whole childhood, and in order to describe him she did not need to consult the daguerreotype¹ in the drawing room that showed him dressed as an explorer leaning on an old-fashioned double-barreled rifle with his right foot on the neck of a Malaysian tiger, the same triumphant position in which she had seen the Virgin standing between plaster clouds and pallid angels at the main altar, one foot on the vanquished devil. All Clara had to do to see her uncle was close her eyes and there he was, weather-beaten and thin, with a pirate’s mustache through which his strange, sharklike smile peered out at her. It seemed impossible that he could be inside that long black box that was lying in the middle of the courtyard.

2 Each time Uncle Marcos had visited his sister Nivea’s home, he had stayed for several months, to the immense joy of his nieces and nephews, particularly Clara, causing a storm in which the

NOTES

CLOSE READ

ANNOTATE: In paragraph 1, mark details that show how Clara pictures her uncle, particularly his mustache and smile.

QUESTION: Why does the author use these descriptive details?

CONCLUDE: What is the effect of these details?

1. **daguerreotype** (duh GEHR oh typ) *n.* early type of photograph.

sharp lines of domestic order blurred. The house became a clutter of trunks, of animals in jars of formaldehyde,² of Indian lances and sailor's bundles. In every part of the house people kept tripping over his equipment, and all sorts of unfamiliar animals appeared that had traveled from remote lands only to meet their death beneath Nana's irate broom in the farthest corners of the house. Uncle Marcos's manners were those of a cannibal, as Severo put it. He spent the whole night making incomprehensible movements in the drawing room; later they turned out to be exercises designed to perfect the mind's control over the body and to improve digestion. He performed alchemy³ experiments in the kitchen, filling the house with fetid smoke and ruining pots and pans with solid substances that stuck to their bottoms and were impossible to remove. While the rest of the household tried to sleep, he dragged his suitcases up and down the halls, practiced making strange, high-pitched sounds on savage instruments, and taught Spanish to a parrot whose native language was an Amazonic dialect. During the day, he slept in a hammock that he had strung between two columns in the hall, wearing only a loincloth that put Severo in a terrible mood but that Nívea forgave because Marcos had convinced her that it was the same costume in which Jesus of Nazareth had preached. Clara remembered perfectly, even though she had been only a tiny child, the first time her Uncle Marcos came to the house after one of his voyages. He settled in as if he planned to stay forever. After a short time, bored with having to appear at ladies' gatherings where the mistress of the house played the piano, with playing cards, and with dodging all his relatives' pressures to pull himself together and take a job as a clerk in Severo del Valle's law practice, he bought a barrel organ and took to the streets with the hope of seducing his Cousin Antonieta and entertaining the public in the bargain. The machine was just a rusty box with wheels, but he painted it with seafaring designs and gave it a fake ship's smokestack. It ended up looking like a coal stove. The organ played either a military march or a waltz, and in between turns of the handle the parrot, who had managed to learn Spanish although he had not lost his foreign accent, would draw a crowd with his piercing shrieks. He also plucked slips of paper from a box with his beak, by way of selling fortunes to the curious. The little pink, green, and blue papers were so clever that they always divulged the exact secret wishes of the customers. Besides fortunes there were little balls of sawdust to amuse the children. The idea of the organ was a last desperate attempt to win the hand of Cousin Antonieta after more conventional means of courting her had failed. Marcos thought

2. **formaldehyde** (fawr MAL duh hyd) *n.* solution used as a preservative.

3. **alchemy** (AL kuh mee) *n.* early form of chemistry, with philosophical and magical associations.

no woman in her right mind could remain impassive before a barrel-organ serenade. He stood beneath her window one evening and played his military march and his waltz just as she was taking tea with a group of female friends. Antonieta did not realize the music was meant for her until the parrot called her by her full name, at which point she appeared in the window. Her reaction was not what her suitor had hoped for. Her friends offered to spread the news to every salon⁴ in the city, and the next day people thronged the downtown streets hoping to see Severo del Valle's brother-in-law playing the organ and selling little sawdust balls with a moth-eaten parrot, for the sheer pleasure of proving that even in the best of families there could be good reason for embarrassment. In the face of this stain to the family reputation, Marcos was forced to give up organ-grinding and resort to less conspicuous ways of winning over his Cousin Antonieta, but he did not renounce his goal. In any case, he did not succeed, because from one day to the next the young lady married a diplomat who was twenty years her senior; he took her to live in a tropical country whose name no one could recall, except that it suggested negritude,⁵ bananas, and palm trees, where she managed to recover from the memory of that suitor who had ruined her seventeenth year with his military march and his waltz. Marcos sank into a deep depression that lasted two or three days, at the end of which he announced that he would never marry and that he was embarking on a trip around the world. He sold his organ to a blind man and left the parrot to Clara, but Nana secretly poisoned it with an overdose of cod-liver oil, because no one could stand its lusty glance, its fleas, and its harsh, tuneless hawking of paper fortunes and sawdust balls.

3 That was Marcos's longest trip. He returned with a shipment of enormous boxes that were piled in the far courtyard, between the chicken coop and the woodshed, until the winter was over. At the first signs of spring he had them transferred to the parade grounds, a huge park where people would gather to watch the soldiers file by on Independence Day, with the goosestep they had learned from the Prussians. When the crates were opened, they were found to contain loose bits of wood, metal, and painted cloth. Marcos spent two weeks assembling the contents according to an instruction manual written in English, which he was able to **decipher** thanks to his **invincible** imagination and a small dictionary. When the job was finished, it turned out to be a bird of prehistoric dimensions, with the face of a furious eagle, wings that moved, and a propeller on its back. It caused an uproar. The families of the oligarchy⁶ forgot all about the barrel organ, and Marcos became the star attraction of the season.

4. **salon** (suh LON) *n.* regular gathering of distinguished guests that meets in a private home.

5. **negritude** (NEHG ruh tood) *n.* black people and their cultural heritage.

6. **oligarchy** (OL ih gahr kee) *n.* government ruled by only a few people.

NOTES

CLOSE READ

ANNOTATE: Mark the sentence in the latter part of paragraph 2 that suggests how Antonieta reacts to Marcos's barrel-organ music.

QUESTION: Why does the author provide so little description of her reaction?

CONCLUDE: What is the effect of this choice to suggest but not describe Antonieta's reaction?

decipher (dih SY fuhr) *v.* succeed in interpreting or understanding something

invincible (ihn VIHN suh buhI) *adj.* impossible to defeat

NOTES

contraption (kuhn TRAP shuhn) *n.* machine that seems strange or unnecessarily complicated

newfangled (NOO fang uhld) *adj.* invented only recently and, therefore, strange-seeming

People took Sunday outings to see the bird; souvenir vendors and strolling photographers made a fortune. Nonetheless, the public's interest quickly waned. But then Marcos announced that as soon as the weather cleared he planned to take off in his bird and cross the mountain range. The news spread, making this the most talked-about event of the year. The **contraption** lay with its stomach on terra firma,⁷ heavy and sluggish and looking more like a wounded duck than like one of those **newfangled** airplanes they were starting to produce in the United States. There was nothing in its appearance to suggest that it could move, much less take flight across the snowy peaks. Journalists and the curious flocked to see it. Marcos smiled his immutable⁸ smile before the avalanche of questions and posed for photographers without offering the least technical or scientific explanation of how he hoped to carry out his plan. People came from the provinces to see the sight. Forty years later his great-nephew Nicolás, whom Marcos did not live to see, unearthed the desire to fly that had always existed in the men of his lineage. Nicolás was interested in doing it for commercial reasons, in a gigantic hot-air sausage on which would be printed an advertisement for carbonated drinks. But when Marcos announced his plane trip, no one believed that his contraption could be put to any practical use. The appointed day dawned full of clouds, but so many people had turned out that Marcos did not want to disappoint them. He showed up punctually at the appointed spot and did not once look up at the sky, which was growing darker and darker with thick gray clouds. The astonished crowd filled all the nearby streets, perching on rooftops and the balconies of the nearest houses and squeezing into the park. No political gathering managed to attract so many people until half a century later, when the first Marxist candidate attempted, through strictly democratic channels, to become President. Clara would remember this holiday as long as she lived. People dressed in their spring best, thereby getting a step ahead of the official opening of the season, the men in white linen suits and the ladies in Italian straw hats that were all the rage that year. Groups of elementary-school children paraded with their teachers, clutching flowers for the hero. Marcos accepted their bouquets and joked that they might as well hold on to them and wait for him to crash, so they could take them directly to his funeral. The bishop himself, accompanied by two incense bearers, appeared to bless the bird without having been asked, and the police band played happy, unpretentious music that pleased everyone. The police, on horseback and carrying lances, had trouble keeping the crowds far enough away from the center of

7. **terra firma** (TEHR uh FUR muh) *n.* firm earth; solid ground (from Latin).

8. **immutable** (ih MYOOT uh buhl) *adj.* never changing.

the park, where Marcos waited dressed in mechanic's overalls, with huge racer's goggles and an explorer's helmet. He was also equipped with a compass, a telescope, and several strange maps that he had traced himself based on various theories of Leonardo da Vinci and on the polar knowledge of the Incas.⁹ Against all logic, on the second try the bird lifted off without mishap and with a certain elegance, accompanied by the creaking of its skeleton and the roar of its motor. It rose flapping its wings and disappeared into the clouds, to a send-off of applause, whistlings, handkerchiefs, drumrolls, and the sprinkling of holy water. All that remained on earth were the comments of the amazed crowd below and a multitude of experts, who attempted to provide a reasonable explanation of the miracle. Clara continued to stare at the sky long after her uncle had become invisible. She thought she saw him ten minutes later, but it was only a migrating sparrow. After three days the initial euphoria that had accompanied the first airplane flight in the country died down and no one gave the episode another thought, except for Clara, who continued to peer at the horizon.

- 4 After a week with no word from the flying uncle, people began to speculate that he had gone so high that he had disappeared into outer space, and the ignorant suggested he would reach the moon. With a mixture of sadness and relief, Severo decided that his brother-in-law and his machine must have fallen into some hidden crevice of the *cordillera*,¹⁰ where they would never be found. Nívea wept disconsolately and lit candles to San Antonio, patron of lost objects. Severo opposed the idea of having masses said, because he did not believe in them as a way of getting into heaven, much less of returning to earth, and he maintained that masses and religious vows, like the selling of indulgences, images, and scapulars,¹¹ were a dishonest business. Because of his attitude, Nívea and Nana had the children say the rosary¹² behind their father's back for nine days. Meanwhile, groups of volunteer explorers and mountain climbers tirelessly searched peaks and passes, combing every accessible stretch of land until they finally returned in triumph to hand the family the mortal remains of the deceased in a sealed black coffin. The intrepid traveler was laid to rest in a grandiose funeral. His death made him a hero and his name was on the front page of all the papers for several days. The same multitude that had gathered to see him off the day he flew away in his

9. **Leonardo da Vinci . . . Incas** Leonardo da Vinci (1452–1519) was an Italian painter, sculptor, architect, and scientist. The Incas were Native Americans who dominated ancient Peru until Spanish conquest.

10. **cordillera** (kawr dihY YAIR uh) *n.* system or chain of mountains.

11. **indulgences, images, and scapulars** Indulgences are pardons for sins. Images are pictures or sculptures of religious figures. Scapulars are garments worn by Roman Catholics as tokens of religious devotion.

12. **say the rosary** use a set of beads to say prayers.

NOTES

CLOSE READ

ANNOTATE: Toward the end of paragraph 3, mark details that describe how Marcos is dressed as he waits to begin his flight.

QUESTION: Why does the author mention these details?

CONCLUDE: What do these details show about Marcos's knowledge and experience?

ingenuity (ihn juh NOO uh tee) *n.* quality of being original and clever

CLOSE READ

ANNOTATE: In paragraph 5, mark details that present the crystal ball as mysterious and magical. Mark other details that present it as ordinary.

QUESTION: Why does the author include these contrasting elements?

CONCLUDE: What is the effect of these details?

bird paraded past his coffin. The entire family wept as befit the occasion, except for Clara, who continued to watch the sky with the patience of an astronomer. One week after he had been buried, Uncle Marcos, a bright smile playing behind his pirate's mustache, appeared in person in the doorway of Nívea and Severo del Valle's house. Thanks to the surreptitious¹³ prayers of the women and children, as he himself admitted, he was alive and well and in full possession of his faculties, including his sense of humor. Despite the noble lineage of his aerial maps, the flight had been a failure. He had lost his airplane and had to return on foot, but he had not broken any bones and his adventurous spirit was intact. This confirmed the family's eternal devotion to San Antonio, but was not taken as a warning by future generations, who also tried to fly, although by different means. Legally, however, Marcos was a corpse. Severo del Valle was obliged to use all his legal **ingenuity** to bring his brother-in-law back to life and the full rights of citizenship. When the coffin was pried open in the presence of the appropriate authorities, it was found to contain a bag of sand. This discovery ruined the reputation, up till then untarnished, of the volunteer explorers and mountain climbers, who from that day on were considered little better than a pack of bandits.

- 5 Marcos's heroic resurrection made everyone forget about his barrel-organ phase. Once again he was a sought-after guest in all the city's salons and, at least for a while, his name was cleared. Marcos stayed in his sister's house for several months. One night he left without saying goodbye, leaving behind his trunks, his books, his weapons, his boots, and all his belongings. Severo, and even Nívea herself, breathed a sigh of relief. His visit had gone on too long. But Clara was so upset that she spent a week walking in her sleep and sucking her thumb. The little girl, who was only seven at the time, had learned to read from her uncle's storybooks and been closer to him than any other member of the family because of her prophesying powers. Marcos maintained that his niece's gift could be a source of income and a good opportunity for him to cultivate his own clairvoyance. He believed that all human beings possessed this ability, particularly his own family, and that if it did not function well it was simply due to a lack of training. He bought a crystal ball in the Persian bazaar, insisting that it had magic powers and was from the East (although it was later found to be part of a buoy from a fishing boat), set it down on a background of black velvet, and announced that he could tell people's fortunes, cure the evil eye, and improve the quality of dreams, all for the modest sum of five centavos. His first customers were the maids from around the neighborhood. One of them had been accused of stealing, because her employer had misplaced a valuable ring. The crystal ball revealed the

13. **surreptitious** (sur uhp TIHSH uhs) *adj.* secretive.



NOTES

exact location of the object in question: it had rolled beneath a wardrobe. The next day there was a line outside the front door of the house. There were coachmen, storekeepers, and milkmen; later a few municipal employees and distinguished ladies made a discreet appearance, slinking along the side walls of the house to keep from being recognized. The customers were received by Nana, who ushered them into the waiting room and collected their fees. This task kept her busy throughout the day and demanded so much of her time that the family began to complain that all there ever was for dinner was old string beans and jellied quince. Marcos decorated the carriage house with some frayed curtains that had once belonged in the drawing room but that neglect and age had turned to dusty rags. There he and Clara received the customers. The two divines wore tunics “the color of the men of light,” as Marcos called the color yellow. Nana had dyed them with saffron powder, boiling them in pots usually reserved for rice and pasta. In addition to his tunic, Marcos wore a turban around his head and an Egyptian amulet around his neck. He had grown a beard and let his hair grow long and he was thinner than ever before. Marcos and Clara were utterly convincing, especially because the child had no need to look into the crystal ball to guess what her clients wanted to hear. She would whisper in her Uncle Marcos’s ear, and he in turn would transmit the message to the client, along with any **improvisations** of his own that he thought pertinent. Thus their fame spread, because all those who arrived sad and bedraggled at the consulting room left filled with hope. Unrequited lovers were told how to win over indifferent hearts, and the poor left with foolproof tips on how to place their money at the dog track. Business grew so prosperous that the waiting room was always packed with people, and Nana began to suffer dizzy spells from being on her feet so many hours a day. This time Severo had no need to intervene to put a stop to his brother-in-law’s venture, for both Marcos and Clara, realizing

improvisations (ihm pruh vy ZAY shuhnz) *n.* things that are created without any preparation

CLOSE READ

ANNOTATE: In the description of Marcos's stories in paragraph 6, mark details that relate to the senses of touch, sight, and hearing.

QUESTION: Why does the author include these sensory details?

CONCLUDE: What is the effect of these details?

that their unerring guesses could alter the fate of their clients, who always followed their advice to the letter, became frightened and decided that this was a job for swindlers. They abandoned their carriage-house oracle and split the profits, even though the only one who had cared about the material side of things had been Nana.

- 6 Of all the del Valle children, Clara was the one with the greatest interest in and stamina for her uncle's stories. She could repeat each and every one of them. She knew by heart words from several dialects of the Indians, was acquainted with their customs, and could describe the exact way in which they pierced their lips and earlobes with wooden shafts, their initiation rites, the names of the most poisonous snakes, and the appropriate antidotes for each. Her uncle was so eloquent that the child could feel in her own skin the burning sting of snakebites, see reptiles slide across the carpet between the legs of the jacaranda room divider, and hear the shrieks of macaws behind the drawing-room drapes. She did not hesitate as she recalled Lope de Aguirre's search for El Dorado¹⁴, or the unpronounceable names of the flora and fauna her extraordinary uncle had seen; she knew about the lamas who take salt tea with yak lard and she could give detailed descriptions of the opulent women of Tahiti, the rice fields of China, or the white prairies of the North, where the eternal ice kills animals and men who lose their way, turning them to stone in seconds. Marcos had various travel journals in which he recorded his excursions and impressions, as well as a collection of maps and books of stories and fairy tales that he kept in the trunks he stored in the junk room at the far end of the third courtyard. From there they were hauled out to inhabit the dreams of his descendants, until they were mistakenly burned half a century later on an infamous pyre.
- 7 Now Marcos had returned from his last journey in a coffin. He had died of a mysterious African plague that had turned him as yellow and wrinkled as a piece of parchment. When he realized he was ill, he set out for home with the hope that his sister's ministrations and Dr. Cuevas's knowledge would restore his health and youth, but he was unable to withstand the sixty days on ship and died at the latitude of Guayaquil, ravaged by fever and hallucinating about musky women and hidden treasure. The captain of the ship, an Englishman by the name of Longfellow, was about to throw him overboard wrapped in a flag, but Marcos, despite his savage appearance and his delirium, had made so many friends on board and seduced so many women that the


14. **Lope de Aguirre's...El Dorado** Lope de Aguirre (LOH pay day ah GEER ray) was a Spanish adventurer (1510–1561) who journeyed through South America in search of the legendary city of El Dorado, which was supposedly rich in gold.

passengers prevented him from doing so, and Longfellow was obliged to store the body side by side with the vegetables of the Chinese cook, to preserve it from the heat and mosquitoes of the tropics until the ship's carpenter had time to improvise a coffin. At El Callao they obtained a more appropriate container, and several days later the captain, furious at all the troubles this passenger had caused the shipping company and himself personally, unloaded him without a backward glance, surprised that not a soul was there to receive the body or cover the expenses he had incurred. Later he learned that the post office in these latitudes was not as reliable as that of far-off England, and that all his telegrams had vaporized en route. Fortunately for Longfellow, a customs lawyer who was a friend of the del Valle family appeared and offered to take charge, placing Marcos and all his paraphernalia in a freight car, which he shipped to the capital to the only known address of the deceased: his sister's house....

NOTES

Comprehension Check

Complete the following items after you finish your first read.

1. How does Uncle Marcos try to win the hand of Cousin Antonieta?
2. What does Uncle Marcos make from the materials he brings back in "enormous boxes"?
3. What special power does Clara have that Marcos pretends to possess?
4.  **Notebook** To confirm your understanding, write a summary of "Uncle Marcos."

RESEARCH

Research to Clarify Choose at least one unfamiliar detail from the text. Briefly research that detail. In what way does the information you learned shed light on an aspect of the story?



UNCLE MARCOS

Close Read the Text

1. This model, from paragraph 3 of the text, shows two sample annotations, along with questions and conclusions. Close read the passage, and find another detail to annotate. Then, write a question and your conclusion.

ANNOTATE: These phrases have similar structures but present contrasting ideas.

QUESTION: Why does the author use these similar phrases?

CONCLUDE: The structure emphasizes the contrast and hints at the surprise of the successful lift-off.

ANNOTATE: This series of nouns indicates the reactions of the crowd.

QUESTION: Why does the author present the crowd's reaction in this way?

CONCLUDE: The series of nouns shows how different types of people respond. The nouns suggest their social roles.

Against all logic, on the second try the bird lifted off without mishap and with a certain elegance, accompanied by the creaking of its skeleton and the roar of its motor. It rose flapping its wings and disappeared into the clouds, to a send-off of applause, whistlings, handkerchiefs, drumrolls, and the sprinkling of holy water.

Tool Kit

Close-Read Guide and Model Annotation

2. For more practice, go back into the text and complete the close-read notes.
3. Revisit a section of the text you found important during your first read. Read this section closely and **annotate** what you notice. Ask yourself **questions** such as "Why did the author make this choice?" What can you **conclude**?

Analyze the Text

CITE TEXTUAL EVIDENCE to support your answers.

Notebook Respond to these questions.

1. **Analyze** Why might Uncle Marcos be "the only perfectly clear image" Clara remembers from her childhood? Explain.
2. **Interpret** What motivates Uncle Marcos to undertake the flying machine project? Explain your thinking.
3. **Compare and Contrast** In what ways is the barrel organ incident similar to and different from the incident with the mechanical bird?
4. **Essential Question: Are inventions realized through inspiration or perspiration?** What has this story taught you about the concept of invention?

STANDARDS

Reading Literature

- Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
- Analyze how particular lines of dialogue or incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision.

MS ELA Grade 8 Week 4: April 20-24

Dear Parent(s)/Guardian(s) and Students,

We continue our study of Unit 5, there are various opportunities to strengthen your literacy skills. In what ways have the reading activities so far led you to think: inventions are realized more through inspiration or perspiration? Enjoy learning!

Grade 8 Unit 5 Invention: Are inventions realized through inspiration or perspiration?		
Week 4: April 20-24	p. 459 p. 460 p. 461 p. 462 p. 464 pp. 465 - 471	<ul style="list-style-type: none">● Analyze Craft and Structure● Vocabulary● Conventions● Writing a Character Analysis● Additional Vocabulary● Complete the reading and activities like the previous story.

8th Grade Unit 5 *Invention*

Week 4: April 20 – 24

Daily Planning Guide/Checklist/Additional Support

pp. 459 - 471

Monday, April 20

_____ Read through (or have read aloud) the information on p. 459.

_____ Journal or talk to someone about the questions (1 – 4) at the bottom of p. 459.

_____ *Concept Vocabulary* p. 460

Decipher də'sɪfər – convert, decode, solve, interpret

Invincible in'vɪnsəb(ə)l – to powerful to be defeated, indestructible, unbeatable

Contraption/kən'trapSH(ə)n/ - device, gadget, machine

Newfangledn(y)oo'faNGgəld – new, modern, the latest, the newest

Ingenuity - injə'n(y)ooədē – clever, inventive, imagination, inventive

Improvisations - im.prävə'zāSH(ə)n – ad lib, create without preparing

_____ Complete the sentences 1-6 on p. 460 with the correct vocabulary words.

Tuesday, April 21

_____ Read through (or have read aloud) *Word Study* on the bottom of p. 460.

- _____ Read through (or have read aloud) the *Conventions* section on p. 461.
- _____ Journal or talk through the *Write It* section at the bottom of p. 461.

Wednesday, April 22

- _____ Read through (or have read aloud) p. 462.
- _____ Analyze or think about the character Uncle Marcos. In your view was he a dreamer, crazy, a fake, a different or unusual person, or something else? This will be your claim.
- _____ Paragraph #1 – State your claim about Uncle Marcos. Use an example from the text that supports your claim.
- _____ Paragraph #2 – Continue to use examples from the text as evidence that shows what Uncle Marcos is like. Support these examples with your own thinking.
- _____ Paragraph #3 – State your claim again. Use quotations that support your claim. Write about the reasons which show why your claim is correct.
- _____ *Reflect on Your Writing* bottom of p. 462. Does your writing answer the questions?

Thursday, April 23

- _____ Rank the vocabulary at the top of p. 464. 1 is the word with which you are most familiar and 6 is the word with which you are least familiar.
- _____ Take a walk through the text pp. 465 – 470. Study the vocabulary words in the margins. Look at them within the text to help your understanding.
- _____ Read or preview the Close Read Notes questions in the margins pp. 465 – 470.
- _____ Read (or have read aloud) *To Fly from Space Chronicles* pp. 465 – 470.

Friday, April 24

- _____ Re-read, scan, (or have read aloud) the article pp. 465 – 470.
- _____ Make notes or jot down when the inventions listed in the article were created or invented.
- _____ On p. 466, look at paragraphs 2, 3, and 4. Highlight or underline details that tell how people move on earth.
- _____ In the same paragraphs as above, highlight or underline details that tell how birds and other creatures fly.
- _____ On p. 470 in paragraph 16, mark the point where the author stops using scientific words and begins to use language tied to emotions.
- _____ Create a timeline showing when the inventions talked about in the article were created or invented.
- _____ Congratulations - you've completed Week 4 and you're awesome!!!

Analyze Craft and Structure

Propelling the Action: Character A **character** is a personality that is part of a story. A character may be a person, an animal, or even an object. In all narratives, the **plot**, or sequence of related events, is moved by a conflict that characters face. The story involves the ways in which characters experience and solve the conflict.

- The **main character** is the most important character in the narrative, the one whose conflict drives the plot.
- **Character traits** are the qualities, attitudes, and values that a character has. For example, a character might be reliable, smart, selfish, or stubborn.
- A **round character** has many different traits, both good and bad. In contrast, a **flat character** is one-dimensional, displaying only a single trait.
- A **dynamic character** changes and learns. A **static character** does not change or learn.

Writers use a variety of techniques to portray characters. They describe what characters look like and how they behave. They reveal what characters want, feel, think, and say. **Dialogue**, or words characters say, is a tool most fiction writers use to help portray characters. Dialogue reflects the words as a character speaks them, and is set off with quotation marks. In this excerpt, Isabel Allende does not use dialogue in a traditional way. She refers to things characters say, but does not quote them directly.

Practice

 **Notebook** Respond to these questions.

1. **(a)** What happens to Nivea's household when Uncle Marcos visits? Cite details that support your response. **(b)** What does his effect on the household tell you about Uncle Marcos's character?
2. **(a)** What does Clara do repeatedly after her uncle disappears on the flying machine? **(b)** How does her reaction differ from those of other family members? **(c)** What does Clara's reaction show about her character and relationship to Uncle Marcos? Explain.
3. Allende does not quote characters directly. However, she sometimes tells the reader what they say. Cite an example of a statement Uncle Marcos makes. Explain what this statement shows about his character.
4. Reread sections of the text that describe Clara and Uncle Marcos. **(a)** Determine whether each character is round or flat. **(b)** Determine whether each character is static or dynamic. For both (a) and (b), explain your responses and cite textual details that support them.

CITE TEXTUAL EVIDENCE
to support your answers.



UNCLE MARCOS


Concept Vocabulary

decipher**contraption****ingenuity****invincible****newfangled****improvisations**

Why These Words? The concept vocabulary words are all related to cleverness and innovation. For example, Uncle Marcos manages to *decipher* an instruction manual written in English in order to build his flying machine. Severo must use his *ingenuity*, or original, clever thinking to restore Uncle Marcos's citizenship rights.

1. How does the concept vocabulary help the reader understand Uncle Marcos as an inventor?
2. What other words in the selection describe Uncle Marcos's inventions or inventiveness?

Practice

 **Notebook** The concept vocabulary words appear in "Uncle Marcos." Complete each sentence with the correct word.

1. A person who prefers old-fashioned objects might not want something _____.
2. A spy might have to _____ a code to find the hidden message.
3. If things do not go according to plan, you might have to think quickly and make _____.
4. You might admire a creative person's _____ in solving problems.
5. People might call a strange or unusual machine a _____.
6. A superhero who is _____ has nothing to fear from a villain's attacks.

Word Study

Latin Suffix: -ity The Latin suffix *-ity* means "state or quality of being." The author of this story refers to Severo's legal *ingenuity*, or his quality of being *ingenious* (original, clever, and resourceful). Use what you know about the Latin suffix *-ity* to answer these questions.

1. How does the Latin suffix *-ity* help you understand the meaning of the word *ability* as it is used in paragraph 5?
2. Explain what the word *responsibility* means. Then, give an example of a situation in which a person demonstrates responsibility.

WORD NETWORK

Add words related to invention from the text to your Word Network.

STANDARDS

Language

- Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- Determine or clarify the meaning of unknown and multiple-meaning words or phrases based on *grade 8 reading and content*, choosing flexibly from a range of strategies.
 - b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word.

Conventions

Subject Complements One essential tool for Allende and other writers is the subject complement, which allows a writer to define or describe the subject of a sentence.


A **linking verb** connects its subject to a subject complement. A **subject complement** is a noun, a pronoun, or an adjective that follows a linking verb and tells something about the subject.

The most common linking verbs are forms of *be*, such as *am*, *is*, *are*, *was*, and *were*. Other verbs that function as linking verbs when they are followed by subject complements include *seem*, *look*, *feel*, *become*, *grow*, and *appear*. There are three types of subject complements:

- A **predicate noun** or **predicate pronoun** (also called **predicate nominatives**) follows a linking verb and identifies or renames the subject of a sentence.
- A **predicate adjective** follows a linking verb and describes the subject of a sentence.

PREDICATE NOUN	PREDICATE PRONOUN	PREDICATE ADJECTIVE
Ronnie <i>became</i> the <u>captain</u> of the team.	The winners <i>are</i> <u>they</u> .	The flight to Houston <i>seemed</i> <u>swift</u> .
The noun <i>captain</i> renames the subject, <i>Ronnie</i> .	<i>They</i> identifies the subject, <i>winners</i> .	<i>Swift</i> describes the subject, <i>flight</i> .

Read It

-  **Notebook** Identify the predicate noun, pronoun, or adjective in each sentence. Then, briefly describe its function in the sentence.
 - The man who returned was really he, alive and well.
 - Clara is a genuine fortune-teller.
 - When Uncle Marcos leaves, Clara grows upset.
- Reread paragraph 2 of “Uncle Marcos.” Find and label at least one predicate noun and one predicate adjective.

Write It

- Fill in each of the following sentences with a predicate noun or a phrase that includes a predicate noun.
 - Uncle Marcos is a(n) _____.
 - Clara is the _____.
- Fill in each of the following sentences with a predicate adjective.
 - When he works on his inventions, Uncle Marcos seems _____.
 - The character of Clara appears _____.



UNCLE MARCOS

Writing to Sources

A critical review is a type of argument in which a writer states and supports an interpretation or evaluation of a literary work.

Assignment

Write a **critical review** in which you state, explain, and support your understanding of the character of Uncle Marcos. In your view, is Uncle Marcos a dreamer, a crackpot, an innovator, a phony, just an unusual person, or something else? Your critical review should include the following elements:

- a main claim in which you state your position about Uncle Marcos
- an explanation of specific ways in which author Isabel Allende shows what Uncle Marcos is like
- evidence, including quotations from the narrative, that supports your main claim
- reasons that clarify your claim or show why it is valid

As you write your review, be clear about the ways in which your ideas fit together. Use words and phrases that show how one idea leads to the next, and how your evidence connects to the ideas. For example, words and phrases such as *because*, *as a result*, and *consequently* show cause-and-effect relationships. Words and phrases such as *like*, *similarly*, or *on the other hand* show comparison and contrast.

Vocabulary and Conventions Connection Consider including several of the concept vocabulary words. Also, remember to use subject complements correctly to strengthen your writing.

decipher

contraption

ingenuity

invincible

newfangled

improvisations

STANDARDS

Writing

Write arguments to support claims with clear reasons and relevant evidence.

- Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.
- Use words, phrases, and clauses to create cohesion and clarify the relationships between claim(s), counterclaims, reasons, and evidence.

Reflect on Your Writing

After you have written your critical review, answer these questions.

- How does stating a claim and finding support for it help you write a critical review?
- What was the most difficult part of writing your critical review?
- Why These Words?** The words you choose make a difference in your writing. Which words did you specifically choose to clearly convey the connections between your ideas and evidence from the text?



About the Author



Neil deGrasse Tyson

(b. 1958) is an American astrophysicist, author, and science communicator, as well as the current director of the Hayden Planetarium’s Rose Center for Earth and Space. From 2006 to 2011, he hosted the educational science show NOVA ScienceNow on PBS. Tyson grew up in the Bronx and attended the Bronx High School of Science from 1972 to 1976, where he was the editor-in-chief of “Physical Science,” the school paper, and also the captain of the wrestling team.

Tool Kit

First-Read Guide and Model Annotation

STANDARDS

Reading Informational Text
By the end of the year, read and comprehend literary nonfiction at the high end of the grades 6–8 text complexity band independently and proficiently.

To Fly

Concept Vocabulary

As you conduct your first read of “To Fly,” you will encounter these words. Before reading, note how familiar you are with each word. Then, rank the words in order from most familiar (1) to least familiar (6).

Table with 2 columns: WORD and YOUR RANKING. Rows include: myopic, foresight, naiveté, prescient, enable, seminal.

After completing the first read, come back to the concept vocabulary and review your rankings. Mark changes to your original rankings as needed.

First Read NONFICTION

Apply these strategies as you conduct your first read. You will have an opportunity to complete the close-read notes after your first read.



To Fly

from Space Chronicles

Neil deGrasse Tyson

BACKGROUND

The history of human flight is closely tied to the history of speed—flying has meant setting speed records. Heavy flying vehicles, like airplanes, have to move very quickly in order to stay in the air, and space shuttles have to travel at a very high speed called “escape velocity” to get into space.

SCAN FOR
MULTIMEDIA 

- 1 **I**n ancient days two aviators procured to themselves wings. Daedalus flew safely through the middle air, and was duly honored in his landing. Icarus soared upwards to the sun till the wax melted which bound his wings, and his flight ended in a fiasco. In weighing their achievements perhaps there is something to be said for Icarus. The classic authorities tell us, of course, that he was only “doing a stunt”; but I prefer to think of him as the man who certainly brought to light a serious constructional defect in the flying-machines of his day [and] we may at least hope to learn from his journey some hints to build a better machine.

—Sir Arthur Eddington, *Stars & Atoms* (1927)

NOTES

CLOSE READ

ANNOTATE: In paragraphs 2, 3, and 4, mark details that describe how people move about on Earth. Mark other details that describe how birds and other creatures fly.

QUESTION: Why does the author present such a strong contrast between walking and flying?

CONCLUDE: What point do these descriptive details emphasize?

myopic (my OP ihk) *adj.*
nearsighted; unable to see clearly; showing a lack of understanding

foresight (FAWR syt) *n.*
knowledge or insight gained by looking toward the future

- 2 For millennia, the idea of being able to fly occupied human dreams and fantasies. Waddling around on Earth's surface as majestic birds flew overhead, perhaps we developed a form of wing envy. One might even call it wing worship.
- 3 You needn't look far for evidence. For most of the history of broadcast television in America, when a station signed off for the night, it didn't show somebody walking erect and bidding farewell; instead it would play the "Star Spangled Banner" and show things that fly, such as birds soaring or Air Force jets whooshing by. The United States even adopted a flying predator as a symbol of its strength: the bald eagle, which appears on the back of the dollar bill, the quarter, the Kennedy half dollar, the Eisenhower dollar, and the Susan B. Anthony dollar. There's also one on the floor of the Oval Office in the White House. Our most famous superhero, Superman, can fly upon donning blue pantyhose and a red cape. When you die, if you qualify, you might just become an angel—and everybody knows that angels (at least the ones who have earned their wings) can fly. Then there's the winged horse Pegasus; the wing-footed Mercury; the aerodynamically unlikely Cupid; and Peter Pan and his fairy sidekick, Tinkerbell.
- 4 Our inability to fly often goes unmentioned in textbook comparisons of human features with those of other species in the animal kingdom. Yet we are quick to use the word "flightless" as a synonym for "hapless" when describing such birds as the dodo and the booby, which tend to find themselves on the wrong end of evolutionary jokes. We did, however, ultimately learn to fly because of the technological ingenuity afforded by our human brains. And of course, while birds can fly, they are nonetheless stuck with bird brains. But this self-aggrandizing line of reasoning is somewhat flawed, because it ignores all the millennia that we were technologically flightless.
- 5 I remember as a student in junior high school reading that the famed physicist Lord Kelvin, at the turn of the twentieth century, had argued the impossibility of self-propelled flight by any device that was heavier than air. Clearly this was a **myopic** prediction. But one needn't have waited for the invention of the first airplanes to refute the essay's premise. One merely needed to look at birds, which have no trouble flying and, last I checked, are all heavier than air.
- 6 If something is not forbidden by the laws of physics, then it is, in principle, possible, regardless of the limits of one's technological **foresight**. The speed of sound in air ranges from seven hundred to eight hundred miles per hour, depending

on the atmospheric temperature. No law of physics prevents objects from going faster than Mach 1,¹ the speed of sound. But before the sound “barrier” was broken in 1947 by Charles E. “Chuck” Yeager, piloting the Bell X-1 (a US Army rocket plane), much claptrap² was written about the impossibility of objects moving faster than the speed of sound. Meanwhile, bullets fired by high-powered rifles had been breaking the sound barrier for more than a century. And the crack of a whip or the sound of a wet towel snapping at somebody’s buttocks in the locker room is a mini sonic boom, created by the end of the whip or the tip of the towel moving through the air faster than the speed of sound. Any limits to breaking the sound barrier were purely psychological and technological.

7 During its lifetime, the fastest winged aircraft by far was the space shuttle, which, with the aid of detachable rockets and fuel tanks, exceeded Mach 20³ on its way to orbit. Propulsionless on return, it fell back out of orbit, gliding safely down to Earth. Although other craft routinely travel many times faster than the speed of sound, none can travel faster than the speed of light. I speak not from a **naiveté** about technology’s future but from a platform built upon the laws of physics, which apply on Earth as they do in the heavens. Credit the Apollo astronauts who went to the Moon with attaining the highest speeds at which humans have ever flown: about seven miles per second at the end of the rocket burn that lifted their craft beyond low Earth orbit. This is a paltry 1/250 of one percent of the speed of light. Actually, the real problem is not the moat that separates these two speeds but the laws of physics that prevent any object from ever achieving the speed of light, no matter how inventive your technology. The sound barrier and the light barrier are not equivalent limits on invention.

8 The Wright brothers of Ohio are, of course, generally credited with being “first in flight” at Kitty Hawk, North Carolina, as that state’s license-plate slogan reminds us. But this claim needs to be further delineated. Wilbur and Orville Wright were the first to fly a heavier-than-air, engine-powered vehicle that carried a human being—Orville, in this case—and that did not land at a lower elevation than its takeoff point. Previously, people had flown in balloon gondolas and in gliders and had executed controlled descents from the sides of cliffs, but none of those efforts would have made a bird jealous. Nor would Wilbur and Orville’s first trip have turned any bird heads. The first of their four flights—at 10:35 A.M. eastern time on December 17, 1903—lasted twelve

naiveté (nah eev TAY) *n.*
quality of innocent
simplicity

1. **Mach** (mok) **1** speed of sound in dry air; sound travels faster in denser substances.

2. **claptrap** *n.* nonsensical talk.

3. **Mach 20** twenty times the speed of sound.

prescient (PREHSH uhnt)
adj. having knowledge
of things before they
happen

enable (ehn AYB uhl) *v.*
make possible

CLOSE READ

ANNOTATE: In paragraph 11, mark the word the author uses to refer to the writer of the passage quoted in paragraph 10.

QUESTION: Why does the author use this informal term?

CONCLUDE: What is the effect of this casual language?

seconds, at an average speed of 6.8 miles per hour against a 30-mile-per-hour wind. The Wright Flyer, as it was called, had traveled 120 feet, not even the length of one wing on a Boeing 747.

- 9 Even after the Wright brothers went public with their achievement, the media took only intermittent notice of it and other aviation firsts. As late as 1933—six years after Lindbergh’s historic solo flight across the Atlantic—H. Gordon Garbedian ignored airplanes in the otherwise **prescient** introduction to his book *Major Mysteries of Science*:

Present day life is dominated by science as never before. You pick up a telephone and within a few minutes you are talking with a friend in Paris. You can travel under sea in a submarine, or circumnavigate the globe by air in a Zeppelin. The radio carries your voice to all parts of the earth with the speed of light. Soon, television will **enable** you to see the world’s greatest spectacles as you sit in the comfort of your living room.

- 10 But some journalists did pay attention to the way flight might change civilization. After the Frenchman Louis Blériot crossed the English Channel from Calais to Dover on July 25, 1909, an article on page three of the *New York Times* was headlined “Frenchman Proves Aeroplane No Toy.” The article went on to delineate England’s reaction to the event:

Editorials in the London newspapers buzzed about the new world where Great Britain’s insular⁴ strength is no longer unchallenged; that the aeroplane is not a toy but a possible instrument of warfare, which must be taken into account by soldiers and statesmen, and that it was the one thing needed to wake up the English people to the importance of the science of aviation.

- 11 The guy was right. Thirty-five years later, not only had airplanes been used as fighters and bombers in warfare but the Germans had taken the concept a notch further and invented the V-2 to attack London. Their vehicle was significant in many ways. First, it was not an airplane; it was an unprecedentedly large missile. Second, because the V-2 could be launched several hundred miles from its target, it basically birthed the modern rocket. And third, for its entire airborne journey after launch, the V-2 moved under the influence of gravity alone; in other words, it was a suborbital ballistic missile, the fastest way to deliver a bomb from one location on Earth to another. Subsequently, Cold War “advances” in the design of missiles enabled military power to target cities on

4. **insular** (IHN suh luhr) *adj.* literally, related to being an island; figuratively, detached or isolated.

opposite sides of the world. Maximum flight time? About forty-five minutes—not nearly enough time to evacuate a targeted city.

- 12 While we can say they’re suborbital, do we have the right to declare missiles to be flying? Are falling objects in flight? Is Earth “flying” in orbit around the Sun? In keeping with the rules applied to the Wright brothers, a person must be onboard the craft and it must move under its own power. But there’s no rule that says we cannot change the rules.
- 13 Knowing that the V-2 brought orbital technology within reach, some people got impatient. Among them were the editors of the popular, family-oriented magazine *Collier’s*, which sent two journalists to join the engineers, scientists, and visionaries gathered at New York City’s Hayden Planetarium on Columbus Day, 1951, for its **seminal** Space Travel Symposium. In the March 22, 1952, issue of *Collier’s*, in a piece titled “What Are We Waiting For?” the magazine endorsed the need for and value of a space station that would serve as a watchful eye over a divided world:

In the hands of the West a space station, permanently established beyond the atmosphere, would be the greatest hope for peace the world has ever known. No nation could undertake preparations for war without the certain knowledge that it was being observed by the ever-watching eyes aboard the “sentinel in space.” It would be the end of the Iron Curtains⁵ wherever they might be.

- 14 We Americans didn’t build a space station; instead we went to the Moon. With this effort, our wing worship continued. Never mind that Apollo astronauts landed on the airless Moon, where wings are completely useless, in a lunar module named after a bird. A mere sixty-five years, seven months, three days, five hours, and forty-three minutes after Orville left the ground, Neil Armstrong gave his first statement from the Moon’s surface: “Houston, Tranquility Base here. The Eagle has landed.”
- 15 The human record for “altitude” does not go to anybody for having walked on the Moon. It goes to the astronauts of the ill-fated Apollo 13. Knowing they could not land on the Moon after the explosion in their oxygen tank, and knowing they did not have enough fuel to stop, slow down, and head back, they executed a single figure-eight ballistic trajectory around the Moon, swinging them back toward Earth. The Moon just happened to be near apogee, the farthest point from Earth in its elliptical orbit. No other Apollo mission (before or since) went to the Moon during apogee, which granted the Apollo 13 astronauts the human

seminal (SEHM uh nuhl)
adj. being the first of something that is later recognized as important

5. **Iron Curtains** figurative walls of secrecy and suspicion between the Soviet Union and non-communist countries during the Cold War.

NOTES

CLOSE READ

ANNOTATE: In paragraph 16, mark the point at which the author stops using scientific words and phrases and begins to use poetic, emotional language.

QUESTION: Why does the language change so dramatically at this point?

CONCLUDE: What is the effect of this change, especially in a concluding paragraph?

altitude record. (After calculating that they must have reached about 245,000 miles “above” Earth’s surface, including the orbital distance from the Moon’s surface, I asked Apollo 13 commander Jim Lovell, “Who was on the far side of the command module as it rounded the Moon? That single person would hold the altitude record.” He refused to tell.)

- 16 In my opinion, the greatest achievement of flight was not Wilbur and Orville’s aeroplane, nor Chuck Yeager’s breaking of the sound barrier, nor the Apollo 11 lunar landing. For me, it was the launch of Voyager 2, which ballistically⁶ toured the solar system’s outer planets. During the flybys, the spacecraft’s slingshot trajectories stole a little of Jupiter’s and Saturn’s orbital energy to enable its rapid exit from the solar system. Upon passing Jupiter in 1979, Voyager’s speed exceeded forty thousand miles an hour, sufficient to escape the gravitational attraction of even the Sun. Voyager passed the orbit of Pluto in 1993 and has now entered the realm of interstellar space. Nobody happens to be onboard the craft, but a gold phonograph record attached to its side is etched with the earthly sounds of, among many things, the human heartbeat. So with our heart, if not our soul, we fly ever farther. 🎧

6. **ballistically** (buh LIHS tihk lee) *adv.* like a thrown object.

MEDIA CONNECTION



When I Look Up


Discuss It How does viewing this video affect your thinking about space exploration?

Write your response before sharing your ideas.



Comprehension Check

Complete the following items after you finish your first read.

1. According to Tyson, what idea occupied human fantasies for millennia?
2. According to Tyson, what two ideas did people once think were impossible, even though they do not defy any laws of physics?
3. In Tyson's opinion, what is the greatest achievement of human flight?
4.  **Notebook** Create a rough timeline showing when the inventions discussed in the article were first created. Make sure the order is correct, even if you do not have an exact date for every invention.

RESEARCH

Research to Clarify Choose at least one unfamiliar detail from the text. Briefly research that detail. In what way does the information you learned shed light on an aspect of the essay?

Research to Explore Choose something that interested you from the text, and formulate a research question.

MATH

Week 3 and Week 4

Review Topic: Linear Equations (8.EE.4, 8.EE.5, 8.EE.6)

Example: Writing an equation to represent a constant of proportion.

$$\frac{(y_2 - y_1)}{(x_2 - x_1)} = k \quad \text{When } (x_1, y_1) \text{ and } (x_2, y_2) \text{ are points on a graph or table.}$$

A **proportional relationship** is one in which the ratio of the inputs to the outputs is constant. For example, the ratio of women to men at a university is 3 : 2. Proportional relationships are always written in the form $y = kx$, where x represents an input value, y represents an output value, and k represents some constant that is not equal to 0. The constant k is called the **constant of proportionality**.

Table

x	y
0	0
4	12
10	30

$$(x_1, y_1) = (4, 12) \text{ and } (x_2, y_2) = (10, 30)$$

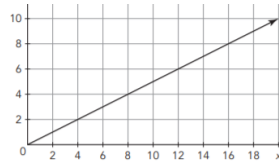
$$\frac{(y_2 - y_1)}{(x_2 - x_1)} = \frac{(30 - 12)}{(10 - 4)} = \frac{18}{6} = 3$$

$$(x_2 - x_1) = (10 - 4) = 6$$

$$k = 3$$

$$y = 3x$$

Graph



$$(x_1, y_1) = (4, 2) \text{ and } (x_2, y_2) = (8, 4)$$

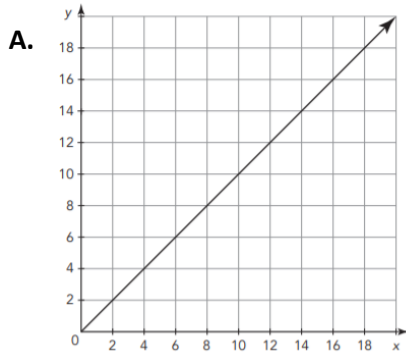
$$\frac{(y_2 - y_1)}{(x_2 - x_1)} = \frac{(4 - 2)}{(8 - 4)} = \frac{2}{4} = \frac{1}{2}$$

$$(x_2 - x_1) = (8 - 4) = 4$$

$$k = \frac{1}{2}$$

$$y = \frac{1}{2}x$$

Find the constant of proportion for each table, ordered pair, and graph below. Then write the equation in the form $y=kx$.



B. $(4, 2)$ and $(12, 6)$

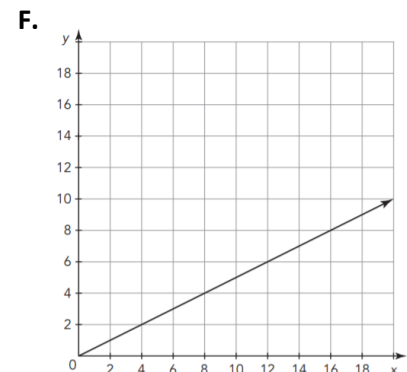
C.

Time Worked (weeks)	Total Bracelets Made
5	150
6	180
8	240
9	270

D.

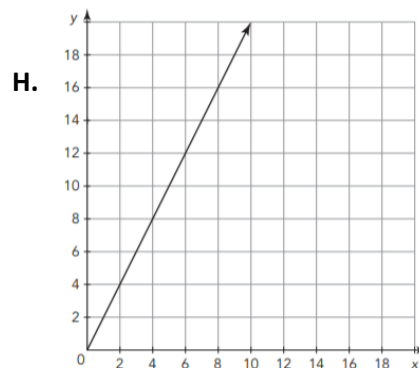
Time Worked (weeks)	Total Bracelets Made
3	160
7	360
10	510
12	610

E. $(2, 5)$ and $(5, 14)$



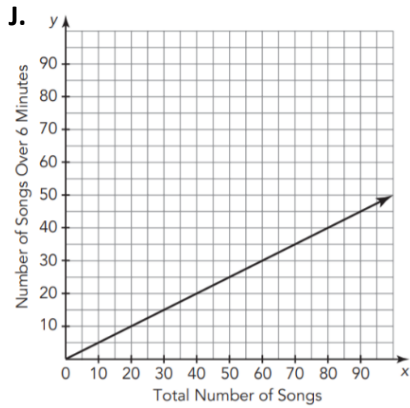
G.

Red Paint (parts)	Yellow Paint (parts)
6	1.5
8	2
12	3
15	3.75



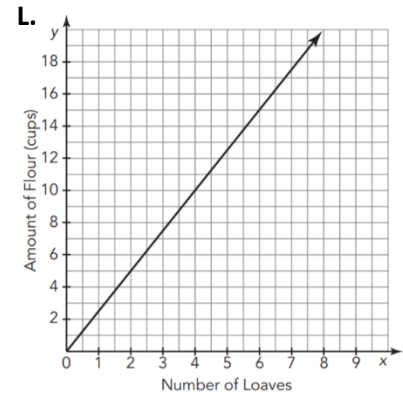
I. $(-1, -4)$ and $(2, 8)$

Page 1 Continued: Find the constant of proportion for each table, ordered pair, and graph below. Then write the equation in the form $y=kx$.



K.

Plant 1	
Week	Plant Height (millimeters)
2	6.4
4	12.8
8	25.6
13	41.6



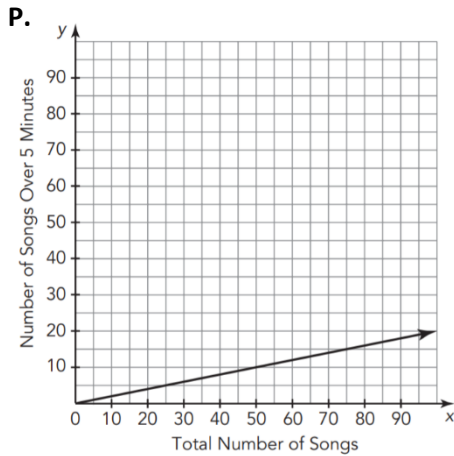
M.

Week	Plant Height (millimeters)
3	10.4
6	20.6
12	41.0
15	51.2

N.
(2, 4) and (8, 16)

O.

Number of Bull's-Eyes Made	Points Displayed
0	10,000
4	58,000
7	94,000
10	130,000



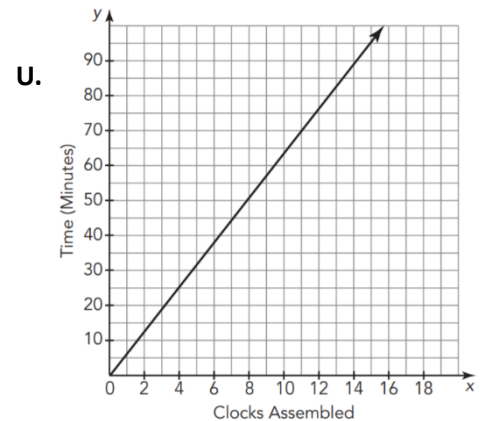
Q.
(4, 3) and (8, 9)

R.
(1, -2) and (4, -8)

S.
(6, 2) and (18,6)

T.

Week	Plant Height (millimeters)
5	28
9	48
13	68
21	108



Let's Put it All Together!

Daisa attends college in another state. During summer break, she drives home from college to visit her family and friends.

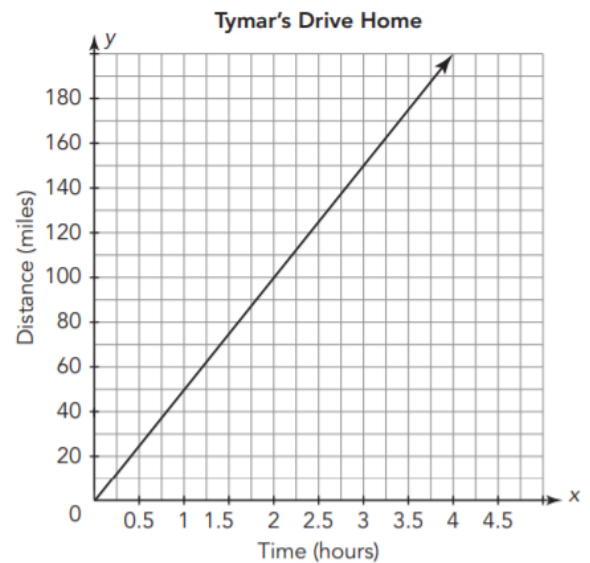
Daisa's Drive Home

Time (hours)	Distance (miles)
3	180
2	120
1.5	90
2.5	150

- Daisa decides to keep track of the time it takes her to drive home from school. She records her distance after various number of hours. Her data are shown in the table.
 - Does this table represent a proportional relationship?
 - Write an equation to represent Daisha's drive home in the form of $y=kx$
 - What rate does she travel per 1 hour?

One of Daisa's high school classmates, Tymar, attends college with Daisa. He also drives home during the summer break but takes a different route.

- Analyze the graph of his trip.
 - Does the graph represent a proportional relationship? Explain your reasoning.
 - Write an equation in the form of $y=kx$ to represent Tymar's drive home.
 - Who drives faster – Daisa or Tymar? Explain your reasoning.



A third friend, Alisha, offers to drive Daisa and Tymar home for spring break so that they can share the cost of gas money. When asked how fast she drives, Alisha reported that the distance traveled, y , for the time, x , can be expressed as $y=57x$.

- Does Alisha's equation represent a proportional relationship? Explain your reasoning.
- Compare the representations of the three friends.
 - Who drives the fastest? Explain your reasoning.
 - Rank the friends in order from the slowest driver to the fastest driver.

Stretch Your Thinking!

Valerie and Marco, who are cousins, are going on a trip to see their grandparents. Each child rides in their own family's car. At the end of the trip, Valerie's family determined they traveled at an average rate of 47.5 miles per hour. Marco's family determined they traveled at an average rate of 55 miles per hour.

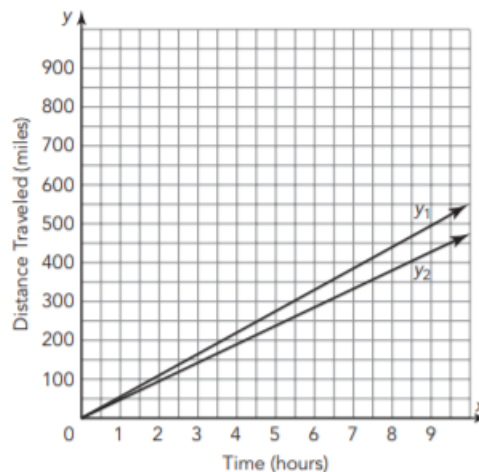
- a. Complete the tables to show the total number of miles traveled for each family.

Time (hours)	Distance Traveled (miles)
0	
2	
3	
5	
7	

Time (hours)	Distance Traveled (miles)
0	
2	
3	
5	
7	

- b. Write an equation to represent the total distance each family traveled where x represents the time and y represents the distance traveled.

- c. Lines y_1 and y_2 represent the distance each family traveled. Determine which line represents each family. Explain your reasoning.



- d. Describe the similarities and differences in each of the graphs, tables, and equations that represent the proportional relationships.

Supports for Diverse Learners

8th Grade Math

Week 3

Standard: 8.EE.4-6

Topic:

- Linear Equations

Supports:

- Reminders
- Step-by-step Instructions for pages 1-2
- Modified Directions for pages 3-4

General Accommodations:

- Read aloud all text
- Use a calculator
- Reduce the number of problems to complete if they are the same type
- Highlighter to denote points on the graphs (where the graphed line crosses the grid line exactly)
- Identify ordered pairs from the graphs and tables

Reminder: Shown below is how you write values from a graph as an ordered pair.

x	y
-2	-1
4	7
0	9
5	-3

→

(x, y)
(-2, -1)
(4, 7)
(0, 9)
(5, -3)

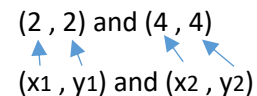
Step-by-step Directions:

Step 1: Find any two points on the graph or table and write them as ordered pairs.

Example, problem A on page 1:

(2, 2) and (4, 4)

Step 2: Label the points using (x₁, y₁) and (x₂, y₂), where the 1s simply denote the numbers from the 1st ordered pair and the 2s denote the numbers from the 2nd ordered pair.

(2, 2) and (4, 4)


Step 3: Substitute the values from Step 2 into the following equation.

$$\frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{4 - 2}{4 - 2}$$

Step 4: Solve and simplify.

$$\frac{2}{2 \text{ or } 1}$$

Step 5: Substitute your answer from Step 4 into the equation $y = kx$ where the answer from Step 4 is always the k.

$$y = 1x$$

Supports for Diverse Learners

8th Grade Math

Week 3

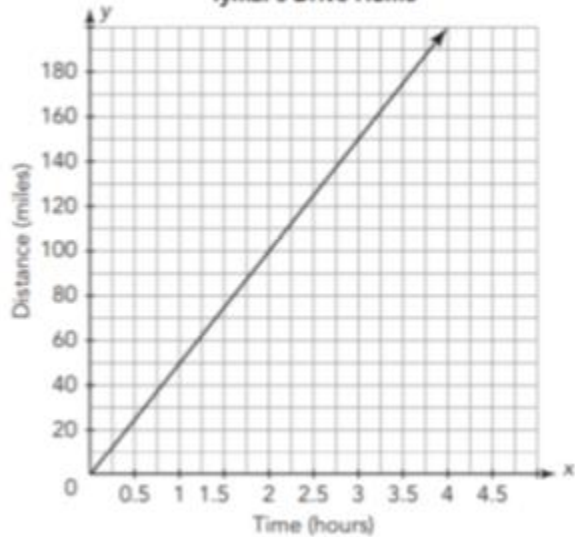
Modified Directions for Page 3:

Follow steps 1-5 above using the information from the table and graph. (You can attempt the rest of page 3, but it isn't needed).

Daisa's Drive Home

Time (hours)	Distance (miles)
3	180
2	120
1.5	90
2.5	150

Tymar's Drive Home



For the above graph, use any of these points (1, 50) (2, 100) (3, 150) (4, 200)

Modified Directions for Page 4:

Use the completed tables to complete steps 1-5 above.

Valerie's Family

Time (hours)	Distance Traveled (miles)
0	0
1	47.5
2	95
3	142.5
4	190

Marco's Family

Time (hours)	Distance Traveled (miles)
0	0
1	55
2	110
3	165
4	220

Review Topic: Working with Linear Equations & Functions (8.EE.4-6, 8.F.3-4)

Linear Relationships: In any linear relationship, **slope** describes the direction and steepness of a line and is usually represented by the variable m . Slope is another name for rate of change. It represents the ratio of the change in vertical distance to the change in horizontal distance between any two points on the line. The slope of a line is constant between any two points on the line.

In last week's packet, we wrote equations for **proportional relationships** in the form $y=kx$ or $y=mx$. Now, we will practice writing equations for **non-proportional relationships** in the form $y = mx + b$. This equation, called Slope-Intercept Form, represents every point (x, y) on the graph of a line with slope m that passes through the point $(0, b)$.

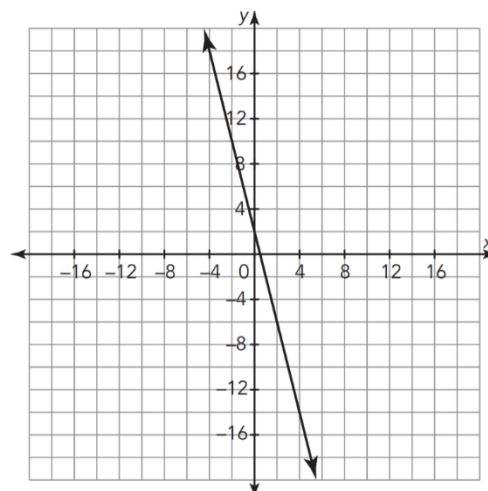
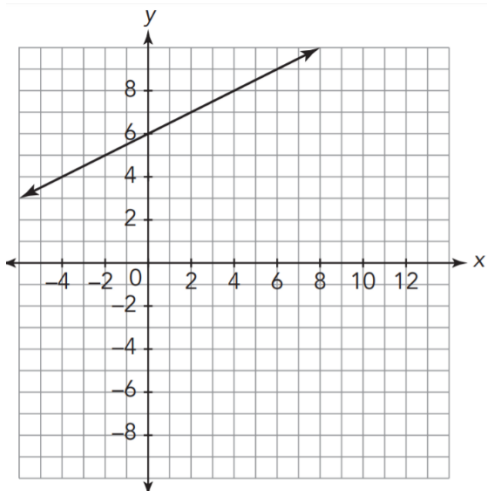
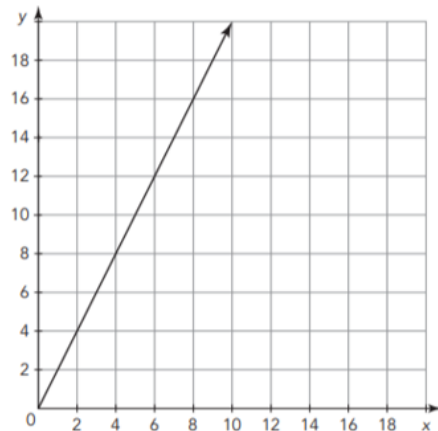
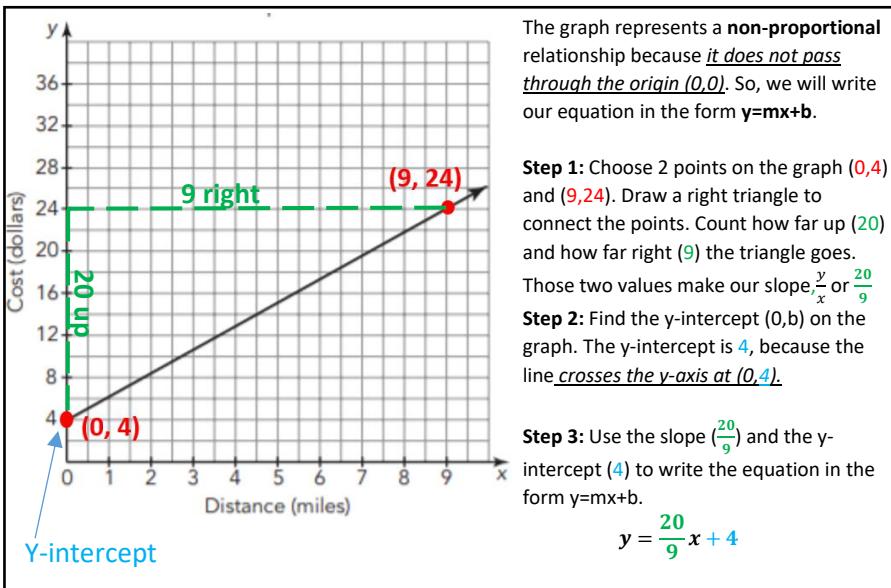
Slope – Intercept Form

$$y = mx + b$$

Slope = $\frac{y}{x}$ Y-intercept = $(0, b)$

Graphs

Determine if each graph represents a proportional or non-proportional relationship. Then, write the equation for the graphed line in the form $y=mx$ (proportional) or $y=mx+b$ (non-proportional)



Remember:
If the graph moves **down** from left to right, we will draw our triangle **DOWN**, then right, which makes our **slope negative**.

Graphing Equations in Slope-Intercept Form

Graph each equation on the coordinate plane.

$y = -\frac{1}{2}x + 3$

$y = -\frac{1}{2}x + 3$

Slope: Down 1
Right 2

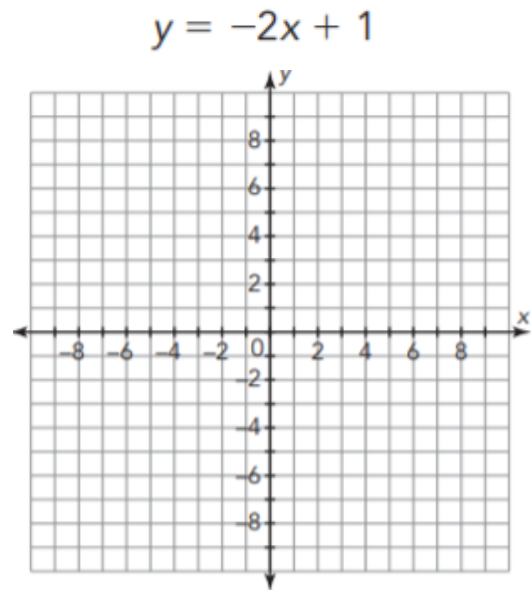
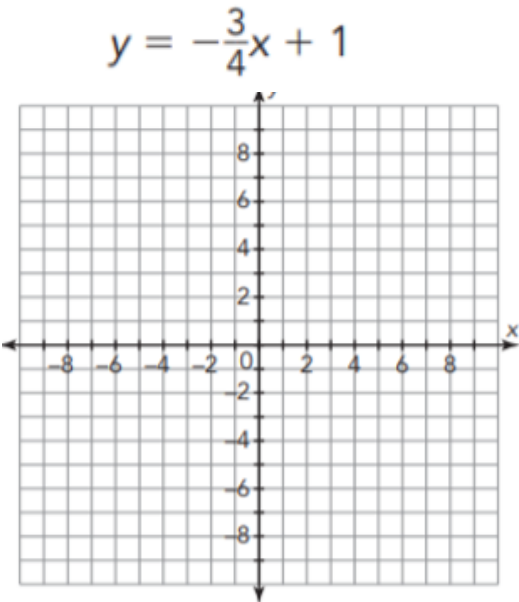
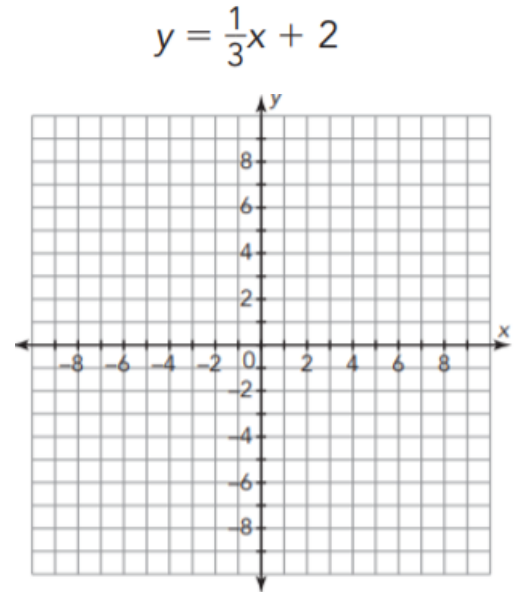
Y-i = (0, 3)

Step 1: Plot your first point on the y-intercept (0, 3)

Step 2: Starting from the y-intercept, count how the slope tells you to (-1/2 = down 1, right 2), and plot a second point.

Step 3: Starting from the new point, perform the pattern again (down 1, right 2)

Step 4: Draw a line through the three points, extending all the way across the graph.



Writing Equations from Non-Proportional Tables

Worked Example:

x	y
-4	1
-2	0
4	-3

Step 1: Chose two points from the table and substitute them into the slope formula.

$$(-4, 1) \text{ and } (-2, 0)$$

$$\frac{y_2 - y_1}{x_2 - x_1} \rightarrow \frac{0 - 1}{-2 - (-4)} \rightarrow \frac{-1}{2} \rightarrow \text{Slope} = -\frac{1}{2}$$

Step 2: Substitute the slope and one point into the equation $y = mx + b$, and solve for b.

Step 3: Sub the slope $(-\frac{1}{2})$ and the y-intercept (-1) into $y = mx + b$.

$$y = -\frac{1}{2}x + (-1) \text{ or } y = -\frac{1}{2}x - 1$$

$$\text{Slope} = -\frac{1}{2} \quad \text{Point} = (-2, 0)$$

$$0 = -\frac{1}{2}(-2) + b$$

$$0 = 1 + b$$

$$-1 = b$$

For each table, write its equation in Slope-Intercept Form

A.

x	y
2	12
3	9
4	6

B.

x	y
-3	7
-2	5
-1	3

C.

x	y
-3	10
-1	4
1	-2

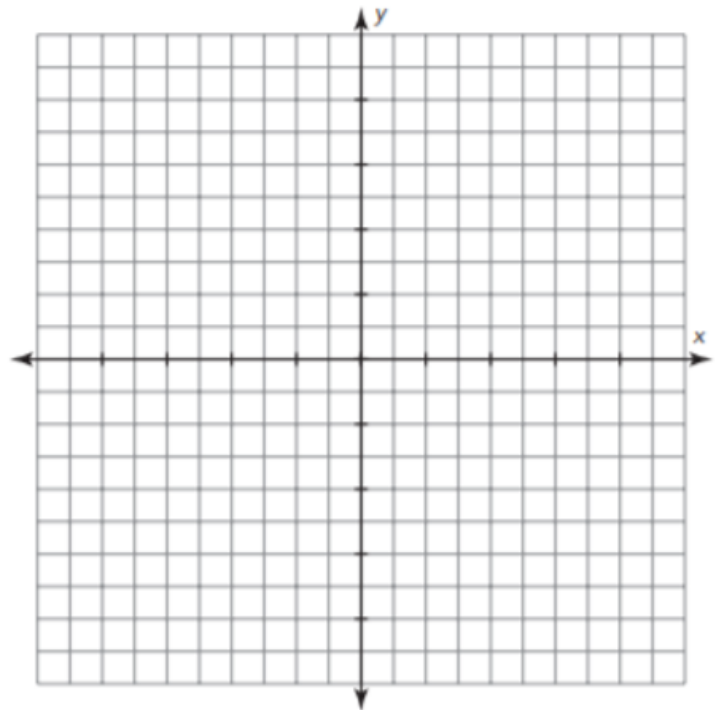
D.

x	y
1	3
3	6
5	9

Apply Our Learning

The bakery charges \$7.50 for one dozen bagels and \$0.50 for each additional bagel. Complete the table. Then use the table to graph the relationship.

Number of Bagels	Total Cost (dollars)
12	
	8.00
15	
	9.50



Write an algebraic equation to represent the situation.

- How much will 2 dozen bagels cost?
- How many bagels can you buy for \$20?

Stretch Your Thinking!

Kyle participated in a 63-mile bikeathon. The table shows Kyle's times at the beginning and end of the bikeathon.

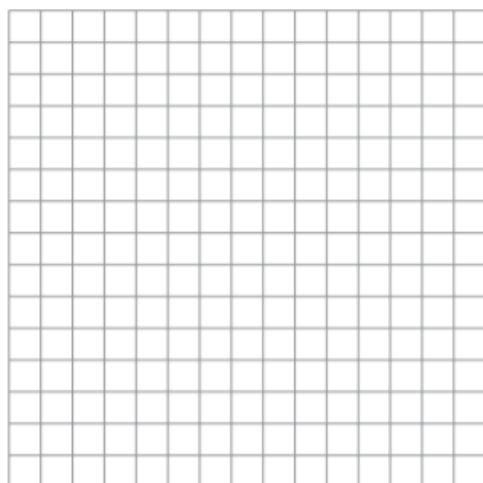
Time (hours)	Distance Biked (miles)
0	0
4.5	63

- Calculate Kyle's average biking speed in miles per hour.
- Define variables for the time and distance that Kyle biked.
- Write an equation that shows the relationship between these variables.
- If Kyle biked at his average speed for the bikeathon, how far would he bike in 90 minutes?
- If Kyle biked at his average speed for the bikeathon, how long would it take him to bike 35 miles?

- Complete the table for Kyle's bike.

Time (hours)	Distance Biked (miles)
0	
	63
1.5	
	35

- Graph the points from the table. Connect the points if you think it is appropriate to do so for this problem situation.



Supports for Diverse Learners

8th Grade Math

Week 4

Standard: 8.EE.4-6 and 8.F.3-4

Topic:

- Linear Equations and Functions

Supports:

- Identified Ordered Pairs from Graphs
- Identified Y-intercept from Equation
- Step-by-step Instructions for page 3
- Modified Directions for pages 3-4

General Accommodations:

- Read aloud all text
- Use a calculator

Identified Ordered Pairs from Graphs (page 1):

- On the first graph, graph the points
(-4 , 4) (-2 , 5) (0 , 6) (2 , 7) and (4 , 8)

Remember to always move left or right first, then up or down. Then follow the steps of the worked example.


- On the second graph, graph the points
(-2, 10) (0 , 2) (2 , -6) and (4 , -14)
Notice that each line on the graph is counting by 2s so fill in the missing numbers, if needed. Remember to always move left or right first, then up or down. Then follow the steps of the worked example.

Identified Y-intercept from Equation (page 2):

- For the equation, $y = 1/3x + 2$
Graph the y-intercept (0 , 2). From that point move up 1, right 3 and plot a point. Continue the pattern following the steps of the worked example.
- For the equation, $y = -3/4x + 1$
Graph the y-intercept (0 , 1). From that point move up 3, left 4 and plot a point. Continue the pattern following the steps of the worked example.
- For the equation, $y = -2x + 1$
First, we turn -2 into a fraction by putting a 1 beneath it $(-2/1x)$.
Graph the y-intercept (0 , 1). From that point move up 2, left 1 and plot a point. Continue the pattern following the steps of the worked example.

Reminder (page 3): Shown below is how you write values from a table as an ordered pair.

x	y
-2	-1
4	7
0	9
5	-3



(x, y)
(-2, -1)
(4, 7)
(0, 9)
(5, -3)

Supports for Diverse Learners

8th Grade Math

Week 4

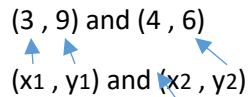
Step-by-step Directions (page 3):

Step 1: Find any two points on the table and write them as ordered pairs.

Example, problem A on page 3:

(3 , 9) and (4 , 6)

Step 2: Label the points using (x₁, y₁) and (x₂, y₂), where the 1s simply denote the numbers from the 1st ordered pair and the 2s denote the numbers from the 2nd ordered pair.

(3 , 9) and (4 , 6)


Step 3: Substitute the values from Step 2 into the following equation.

$$\frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{6 - 9}{4 - 3}$$

Step 4: Solve and simplify.

$$\frac{-3}{1} \text{ or simply } -3$$

Step 5: Substitute your answer from Step 4 into the equation $y = m x + b$ where the answer from Step 4 is always the m.

$$y = -3/1 x + b \text{ or } y = -3x + b$$

Step 6: Take any point from Step 1 and substitute the x and y values into the equation from Step 5.

Remember the first value of an ordered pair is always the x and the second value is always the y.

(3 , 9)

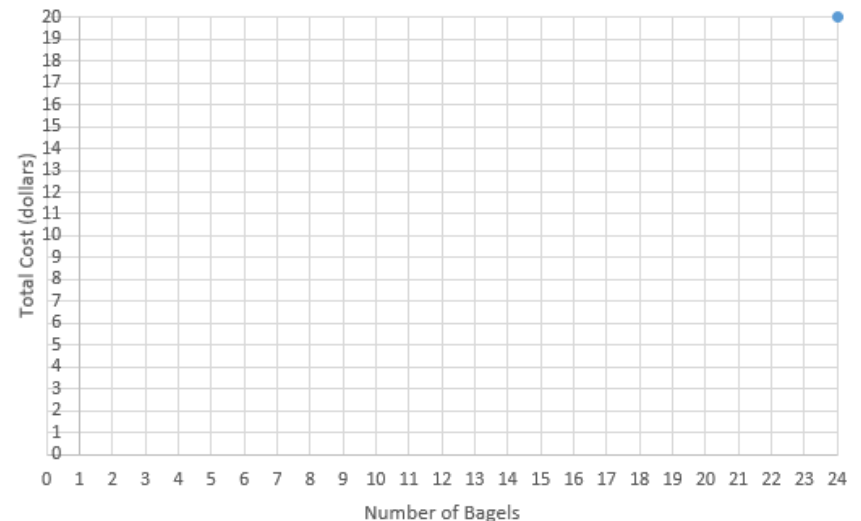
$$y = -3x + b$$

$$9 = -3(3) + b$$

Modified Directions for Apply Our Learning on Page 3:

Follow steps 1-6 above using the information from the table and graph.

Number of Bagels	Total Cost (dollars)
12	7.50
13	8.00
15	9.00
16	9.50
24	
	20.00



Supports for Diverse Learners

8th Grade Math

Week 4

Modified Directions for Stretch Your Thinking on Page 4:

Follow steps 1-6 above using the information from the table and graph.

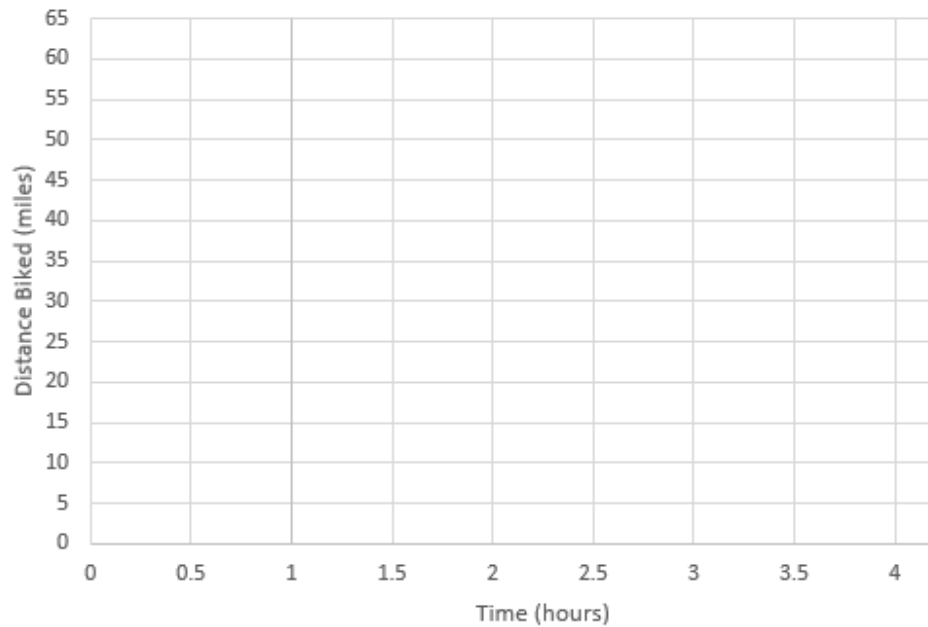
The answer to (a) is the answer of Step 4.

Skip step (b).

The answer to (c) is the answer of Step 5.

Use the graph to estimate the answer to (d) and (e).

Time (hours)	Distance Biked (miles)
0	0
1	(answer to step 4)
1.5 (90 minutes)	
	35
4.5	63





MATH PLUS

Week 3 and Week 4



Solve each equation. Tell whether the equation has one solution, no solutions, or infinite solutions.

 1. $10(x - 2) + 15 = 8x + 7$

 2. $3(3x + 4) - 2x - 5 - 7x = 20$

3. $12x + 9 - 4x - 4 = 3x - 7 - x + 30$

4. $4x + 1 + 3x + 2 + 3x + 7 = 5(2x + 2)$

5. $6x - 5 - 2x + 8 = 12\left(\frac{1}{3}x + \frac{1}{4}\right)$

6. $\frac{9}{x} + 2 = 20$

7. $x + 6(x - 1) = 7(3 + x)$

8. $8x - 8 = 6x - 5 + 2(x - 1.5)$

9. $5 + 5x - 3 = 5x + 9$

10. $\frac{4(x - 8)}{5} = 16$


11. $2(-7x + 5) + 2x = 3x + 3 - 15x$


12. $-5x + 4(3 + 2.5x) = 8x + 12 - 3x$

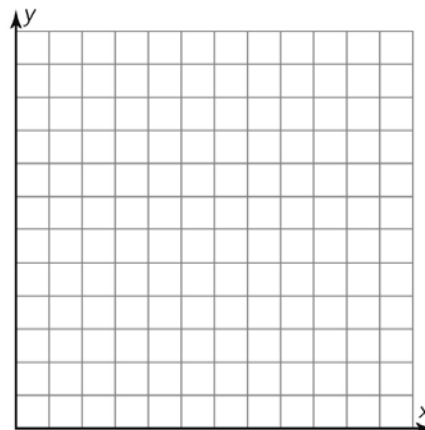
Algebra 1/Math 8 Plus/Intermediate Algebra week 3


Graph each situation. Identify the slope and y-intercept of each graph.

1. At the beginning of the golf season, Karl buys 84 golf balls. He loses 2 balls each time he plays a game.

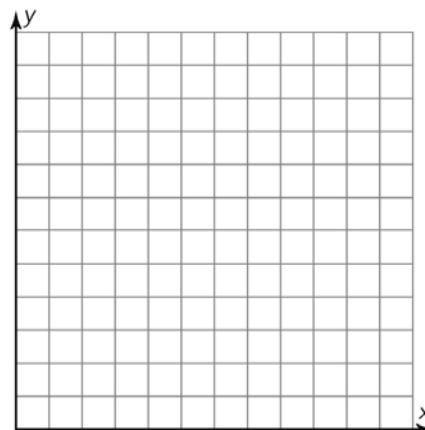
 a. Write an equation that represents the number of golf balls Karl has left given a number of times he plays a game.

-  b. Graph the equation.
- c. Identify the slope and y-intercept of the graph. Explain what each means in terms of the situation.



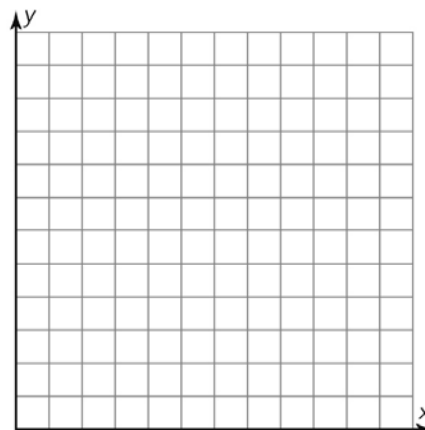
-  2. Frank averages a speed of 19 miles per hour during his bike race. The race is 60 miles long.

- a. Write an equation that represents the number of miles Frank has left in the race given a number of hours he has been racing.
- b. Graph the equation.
- c. Identify the slope and y-intercept of the graph. Explain what each means in terms of the situation



3. Lenora is mulching her flower garden. She was able to mulch 48 square feet of garden before lunch. She plans to finish the job after lunch. Each bag of mulch covers 24 square feet of garden.

- a. Write an equation that represents the number of square feet of garden given a certain number of bags of mulch.
- b. Graph the equation.
- c. Identify the slope and y-intercept of the graph. Explain what each means in terms of the situation.

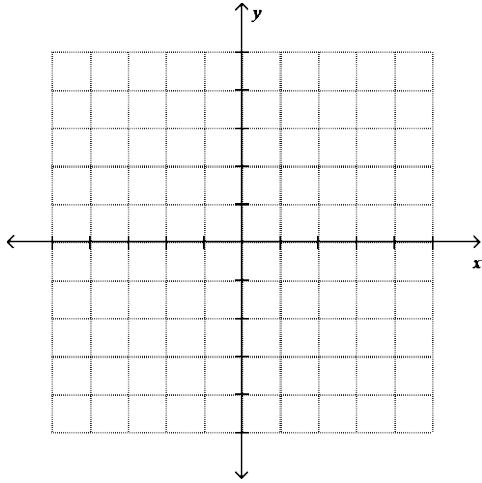


Algebra 1/Math 8 Plus/Intermediate Algebra week 3

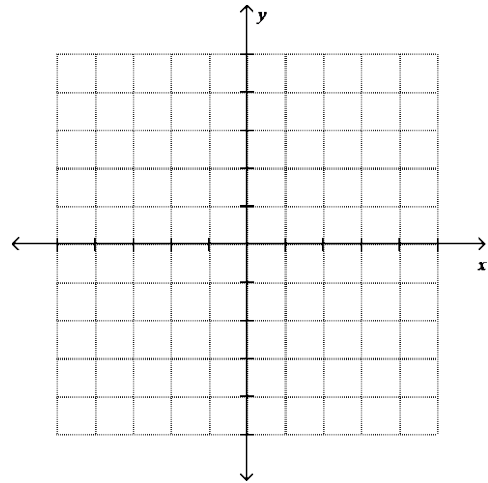
Graph each system. Tell whether the system has *no solution*, *one solution*, or *infinitely many solutions*. If the system has one solution, state the answer.



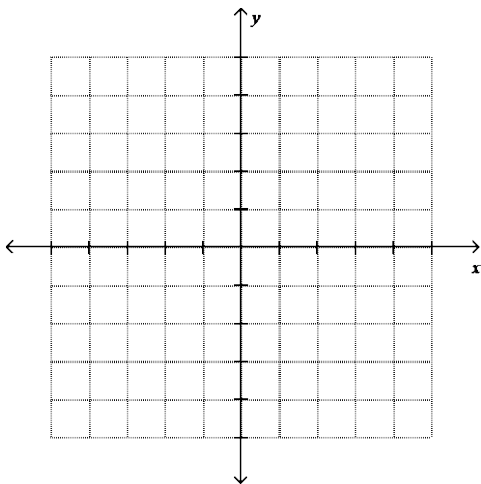
$$y = \frac{-1}{2}x - 3 \quad y = x - 9$$



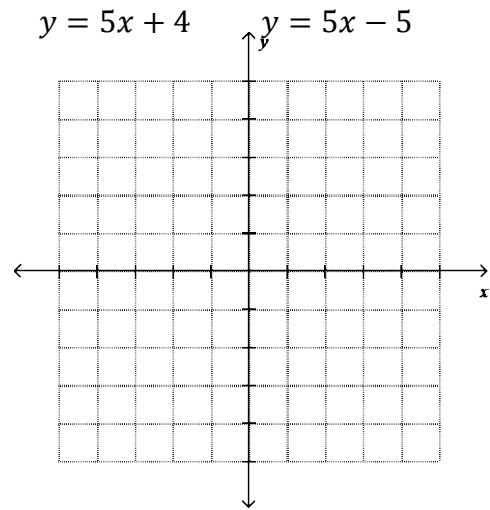
$$y = 2x + 4 \quad y + 5 = 2x$$



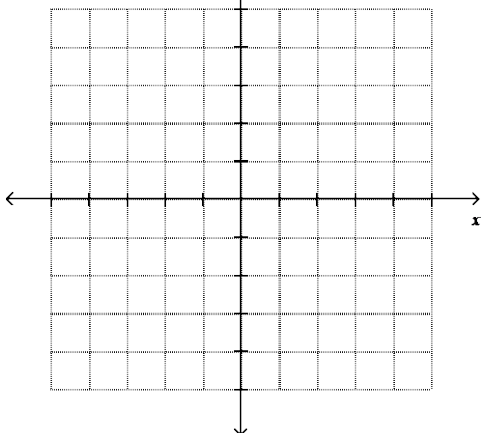
$$y = -2x + 1 \quad 4x + 2y = 2$$



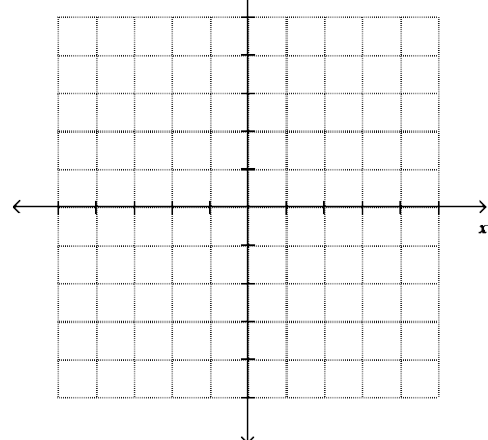
$$y = 5x + 4 \quad y = 5x - 5$$



$$y = x + 4 \quad y - 4 = x$$



$$y = 2x - 3 \quad y = -x + 3$$



Solve by Graphing



Aiko works in the fish department of a pet store. She is asked to drain, clean, and refill two tanks. The first tank holds 175 gallons of water, and the second tank holds 200 gallons of water. The hoses that she uses drain the tanks at a rate of 25 gallons of water per hour.



1. Write an equation for each tank that represents the total amount of water in gallons in the tank, y , in terms of the number of hours, x , that the tanks are draining.

$f(x) =$ _____

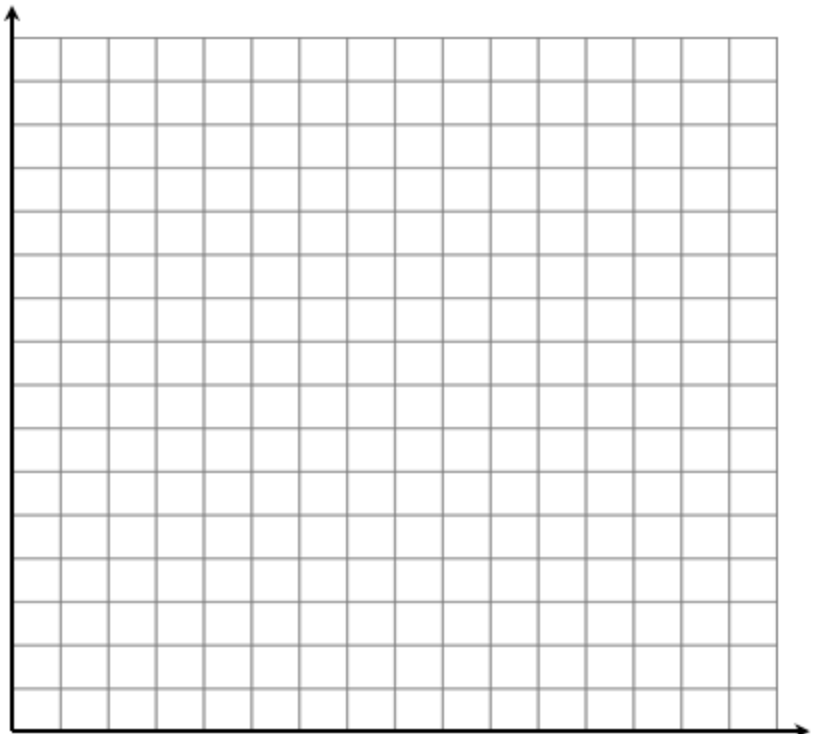
$s(x) =$ _____



2. Write your equations in the first row of the table. Then complete the table of values for the system

3. Graph both equations on the graph provided.

Number of Hours	First Tank	Second Tank
x		
0		
1		
2		
3		
4		
5		
6		
7		



4. Compare the slopes of the two lines in the situation. Include the meaning of the slopes in your explanation.

5. Compare the y-intercepts of the two lines in the situation. Include the meaning of the y-intercepts in your explanation.

6. What is the point of intersection for this system of equations? Explain the meaning of this solution.



7. While Aiko is draining both tanks, she is also filling a 250-gallon tank. The water fills at a rate of 25 gallons per hour. Write an equation that gives the total amount of water in gallons in the third tank, y , in terms of the number of hours, x , that the tank is filling.

$$g(x) = \underline{\hspace{10cm}}$$

8. Add the graph of this equation to the graphs of the other equations.

9. When will the tank that is filling have the same amount of water as the second tank?

10. Explain how you found the answer to #9.

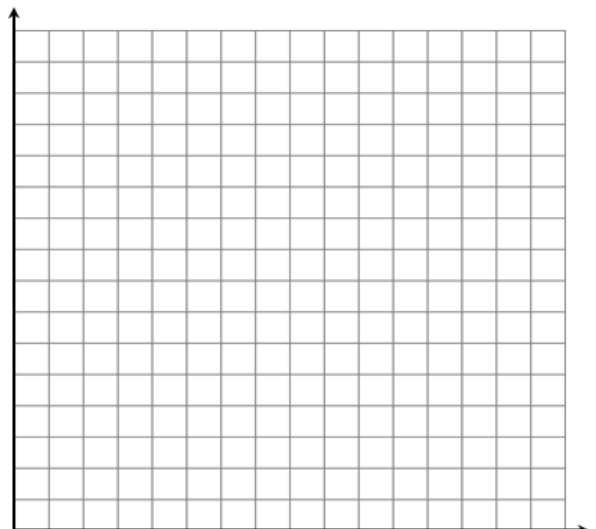


A company was hired to build a tunnel through a mountain. The company started at the south end of the mountain and completed only 545 feet of the required 5450 feet before going bankrupt. A different company was hired to complete the job, but they decided to use two crews. Crew A would start where the other company left off at the southern end, while Crew B would start at the northern end and dig towards the other crew. Crew A was able to dig 22 feet of the tunnel per week. Crew B, which was larger, was able to dig 87 feet of the tunnel per week.

11. How far from the southern end are both crews after 25 weeks of digging?

12. When will Crew A be 853 feet from the southern opening?

13. How long after they start digging will they meet?

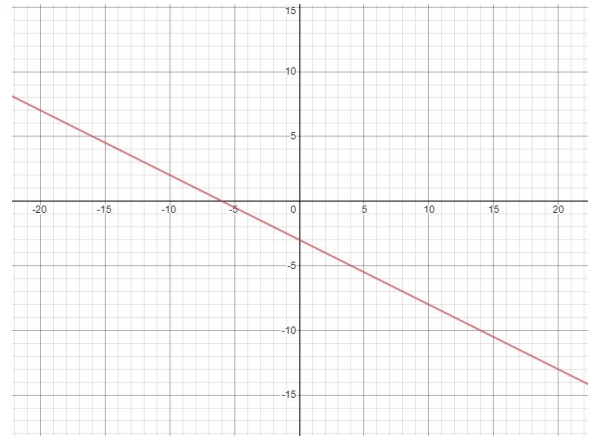


Algebra Support for Specialized Instruction

Monday Page 1
 Tuesday Page 2
 Wednesday Page 3
 Thursday Pages 4-5 problems 1-10
 Friday Page 5 problems 11-13

You do #2:

$$y = \frac{-1}{2}x - 3 \quad y = x - 9$$



	One Solution	Infinite Many Solutions	No Solution
Simplified Equation	$3x - 5 = 7x + 3$	$2 + 4x = 4x + 2$	$8x + 9 = 8x - 5$
Look at the Variable Terms.	The Variable terms are <i>different</i>	Variable terms are the <i>same</i> . Both sides <i>are equal</i> .	Variable terms are the <i>same</i> . Both sides <i>are not equal</i> .

$$\begin{aligned} 10x - 20 + 15 &= 8x + 7 \\ 10x - 5 &= 8x + 7 \\ -8x + 5 &= -8x + 7 \\ \frac{2x}{2} &= \frac{2}{2} \\ x &= 1 \end{aligned}$$

1 solution!

2. $3(3x + 4) - 2x - 5 - 7x = 20$

$$\begin{aligned} 9x + 12 - 2x - 5 - 7x &= 20 \\ -12 + 5 &= \\ \underline{x} &= \underline{\quad} \\ x &= \underline{\quad} \end{aligned}$$

$y = mx + b$
 slope m
 y-intercept b

1.

$$y = -2x + 84$$

Slope: _____

Y-intercept: _____

Aiko works in the fish department of a pet store. She is asked to drain, clean, and refill two tanks. The first tank holds 175 gallons of water, and the second tank holds 200 gallons of water. The hoses that she uses drain the tanks at a rate of 25 gallons of water per hour.

First tank $f(x) = 175 - 25(x)$
 Second tank $s(x) = 200 - 25(x)$

# of hours	First tank	Second tank
0	$175 - 25(0) = \underline{\quad}$	$200 - 25(0) = \underline{\quad}$
1	$175 - 25(1) = \underline{\quad}$	$200 - 25(1) = \underline{\quad}$
2	$175 - 25(2) = \underline{\quad}$	$200 - 25(2) = \underline{\quad}$

A company was hired to build a tunnel through a mountain. The company started at the south end of the mountain and completed only 545 feet of the required 5450 feet before going bankrupt. A different company was hired to complete the job, but they decided to use two crews. Crew A would start where the other company left off at the southern end, while Crew B would start at the northern end and dig towards the other crew. Crew A was able to dig 22 feet of the tunnel per week. Crew B, which was larger, was able to dig 87 feet of the tunnel per week.

2. Frank averages a speed of 19 miles per hour during his bike race. The race is 60 miles long.



ACTIVITY

3.1

Introduction to Substitution



In this lesson, you will explore systems of equations that may or may not be accurately solved using graphs. As you have seen, reasoning can also be used to solve systems. In the next activities, you will learn about solving systems algebraically.

Janet was helping her mother make potato salad for the county fair and was asked to go to the market to buy fresh potatoes and onions. Sweet onions cost \$1.25 per pound, and potatoes cost \$1.05 per pound. Her mother told her to use the \$30 she gave her to buy these two items.

The **standard form of a linear equation** is $Ax + By = C$, where A , B , and C are constants and A and B are not both zero.



1. Write an equation in standard form that relates the number of pounds of potatoes and the number of pounds of onions that Janet can buy for \$30. Use x to represent the number of pounds of onions, and y to represent the number of pounds of potatoes that Janet can buy.
2. Janet's mother told her that the number of pounds of potatoes should be 8 times greater than the number of pounds of onions in the salad. Write an equation in x and y that represents this situation.
3. Will 1 pound of onions and 8 pounds of potatoes satisfy both equations? Explain your reasoning.

WORKED EXAMPLE

Let's consider the system you wrote.

$$\begin{cases} 1.25x + 1.05y = 30 \\ y = 8x \end{cases}$$

Because $y = 8x$ is in slope-intercept form, use this as the first equation.

Step 1: To use the substitution method, begin by choosing one equation and isolating one variable. This will be considered the first equation.

Step 2: Now, substitute the expression equal to the isolated variable into the second equation.

Substitute $8x$ for y in the equation $1.25x + 1.05y = 30$.

Write the new equation.

$$\begin{aligned} 1.25x + 1.05y &= 30 \\ 1.25x + 1.05(8x) &= 30 \end{aligned}$$

You have just created a new equation with only one unknown.

Step 3: Solve the new equation.

$$\begin{aligned} 1.25x + 8.40x &= 30 \\ 9.65x &= 30 \\ x &\approx 3.1 \end{aligned}$$

Therefore, Janet should buy approximately 3.1 pounds of onions.

Now, substitute the value for x into $y = 8x$ to determine the value of y .

$$y = 8(3.1) = 24.8$$

Therefore, Janet should buy approximately 24.8 pounds of potatoes.

Step 4: Check your solution by substituting the values for both variables into the original system to show that they make both equations true.

The slope-intercept form of a linear equation is $y = mx + b$, where m is the slope of the line and b is the y -intercept of the line.



7. Check that the solution is correct. Show your work.

ACTIVITY
3.2

Substitution with Special Systems



Samson and Adrian are helping to set up the booths at the fair. They are each paid \$7 per hour to carry the wood that is needed to build the various booths. Samson arrives at 7:00 A.M. and begins working immediately. Adrian arrives 90 minutes later and starts working.



1. Write an equation that gives the amount of money that Samson will earn, y , in terms of the number of hours he works, x .



2. How much money will Samson earn after 90 minutes of work?

3. Write an equation that gives the amount of money Adrian will earn, y , in terms of the number of hours since Samson started working, x .

Let's see what happens when we solve the system algebraically.

8. Since both equations are written in slope-intercept form as expressions for y in terms of x , substitute the expression from the first equation into the second equation.
 - a. Write the new equation.
 - b. Solve the equation for x .
 - c. Does your result for x make sense? Explain your reasoning.
9. What is the result when you algebraically solve a linear system that contains parallel lines?

Algebra 1/Intermediate Algebra Week 4

1. In order to eat healthier, Bridget is tracking her calories by using an app on her phone. She records what she eats, and then the app indicates how many calories she has eaten. One day, Bridget eats 10 medium strawberries and 8 vanilla wafer cookies as an after-school snack. The caloric intake from these items is 192 calories. The next day, she eats 20 medium strawberries and 1 vanilla wafer cookie as an after-school snack. The caloric intake from these items is 99 calories.



a. Write a system of equations for this problem situation. Use x for strawberries and y for vanilla wafers.

b. Solve the system of equations using the substitution method.

c. How many calories are in each strawberry? How many calories are in each vanilla wafer?

2. Bridget's friend Monica also has the calorie counting app on her phone. Bridget eats 1 banana and 5 pretzel rods, and her app tells her she ate 657 calories. Monica eats 2 bananas and 3 pretzel rods and her app tells her she ate 537 calories.



a. Write a system of equations for this problem situation. Use x for bananas and y for pretzel rods.

b. Solve the system of equations using the substitution method.

a. How many calories are in each banana? How many calories are in each pretzel?

Solving Systems of Equations Using Substitution

DIRECTIONS: Solve each of the following systems of equations by using the substitution method.
SHOW ALL WORK!!!

Ex 1. $4x + y = 5$

$3x - 5y = 21$

^a $4x + y = 5$
 $\underline{-4x \quad -4x}$
 $y = -4x + 5$

^b $3x - 5(-4x + 5) = 21$

^c $3x + 20x - 25 = 21$

$23x - 25 = 21$

$\underline{\quad +25 \quad +25}$

$\underline{23x = 46}$

$\frac{23}{23} = \frac{46}{23}$

$x = 2$

^d $y = -4(2) + 5$

$y = -8 + 5$

$y = -3$

^e $(2, -3)$

- Solve for a variable in one of the equations.
- Plug that result in for the same variable in the other equation.
- Solve for the remaining variable.
- Plug that result in for the first equation you used.
- Final solution

1. $2x + 5y = 7$
 $x = -4y + 2$

2. $y = -3x + 16$
 $2x - 3y = -4$

3. $6x - 2y = 5$
 $3x + 7 = y$

4. $3x + 2y = 6$
 $x - 4y = -12$

5. $6x - 3y = 15$
 $-2x + y = -5$

6. $3x - 4y = -5$
 $-x + 3y = -5$

Algebra Support for Specialized Instruction

Monday: 3.1

Tuesday 3.2

Wednesday Square and Cube numbers Week 4 1-3

Thursday Solving Systems 1-3

Friday 1.3 Solving Systems 4-6

2. Bridget's friend Monica also has the calorie counting app on her phone. Bridget eats 1 banana and 5 pretzel rods, and her app tells her she ate 857 calories. Monica eats 2 bananas and 3 pretzel rods and her app tells her she ate 637 calories.

ACTIVITY 3.1

Introduction to Substitution



1. Write an equation in standard form that relates the number of pounds of potatoes and the number of pounds of onions that Janet can buy for \$30. Use x to represent the number of pounds of onions, and y to represent the number of pounds of potatoes that Janet can buy.

The **standard form**
of a **linear equation**

is $Ax + By = C$,

where A , B , and C are
constants and A and

B are not both zero.

$$x(1.25) + y(1.05) = 30$$

ACTIVITY 3.2

Substitution with Special Systems



Samson and Adrian are helping to set up the booths at the fair. They are each paid \$7 per hour to carry the wood that is needed to build the various booths. Samson arrives at 7:00 A.M. and begins working immediately. Adrian arrives 90 minutes later and starts working.

2. How much money will Samson earn after 90 minutes of work?

$$y = 7(1.5)$$

Algebra 1/Intermediate Algebra Week 4

1a.

Day 1: $10x + 9y = 192$ calories

Day 2: _____ = 99 calories