MARS Tasks | Grade 5

NP=Number Properties
NO=Number Operations
PFA=Patterns Functions Algebra
GM=Geometry & Measurement
DA=Data Analysis

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5th grade   Task 1   Factor Bingo

Student Task	Use the factors of three two-digit numbers to cover game boards. Determine the winner of the game and explain how the game was won.
Core Idea 2 Number Operations	**Understand the meanings of operations and how they relate to each other, make reasonable estimates, and compute fluently.** • Develop fluency in multiplying and dividing whole numbers • Develop fluency with basic number combinations for multiplication and division and use these combinations to mentally compute related problems • Communicate mathematical thinking clearly and coherently

Grade Five – 2005

Factor Bingo

This problem gives you the chance to:
• show you understand factors and know multiplication facts

Glenda and Holly are playing Factor Bingo.

Here is Glenda's game mat:

2	28	36	4
12	18	5	10
9	14	6	8
3	20	7	40

Here is Holly's game mat:

1	40	20	14
2	15	18	6
5	7	11	3
13	4	8	9

The Rules
When the teacher calls out a number, each player can cover **all** the factors of that number. For example, when the number 8 is called out, each player can cover 8 and 1 and 2 and 4.

The winner is the first person who covers **all** the numbers on her mat.

1. The first number that the teacher calls out is 36.
   Draw **circles** around all the numbers that Glenda and Holly can cover.

2. The second number that the teacher calls out is 28.
   Draw **squares** around all the numbers that Glenda and Holly can cover.

3. The next number that the teacher calls out is 40.
   Draw **triangles** around all the numbers that Glenda and Holly can cover.

4. Who wins the game? _____
   Explain why she wins.

   _____

   _____ 8

Grade Five – 2005

Factor Bingo   Test 5

Factor Bingo		Rubric

The core elements of performance required by this task are: • do time calculations in a practical context Based on these, credit for specific aspects of performance should be assigned as follows	points	section points

1.   Check the student grids against the correct grids shown below.
    Mark each symbol that is missing or extra with an appropriate symbol
    (circle, square or triangle).
    Only the first required symbol must be there.
 	
    All circles correct.
    Partial credit
    One circle error.
	2
	
	(1)
		2

2.   All squares correct.
    Partial credit
    One square error.
	2
	
	(1)
		2

3.   All triangles correct.
    Partial credit
    One triangle error.
	2
	
	(1)
		2

4. Gives correct answer: **Glenda** Explains or shows that on Glenda's board all the numbers are covered **or** on Holly's board 15, 11, and 13 are not covered (because they are not factors of 36, 28, or 40)	1 1 ft.	2
Total Points		**8**

Glenda's Mat   Holly's Mat

Grade Five – 2005

5ᵗʰ grade   Task 2   Bead Necklaces

Student Task	Extend a sequence of bead patterns and explain the quantitative relationships in the sequence. Determine the number of triangular iterations when given the total number of round beads.
Core Idea 3 **Patterns, Functions, and Algebra**	**Understand patterns and use mathematical models such as algebraic symbols and graphs to represent and understand quantitative relationships.** • Represent and analyze patterns and functions using words, tables, and graphs • Find the results of a rule for a specific value • Use inverse operations to solve multi-step problems • Use pictorial and verbal representations to solve problems involving variables • Express mathematical relationships using equations • Communicate mathematical thinking clearly and coherently

Grade Five – 2005

Bead Necklaces

This problem gives you the chance to:
• work with a sequence of bead patterns
• make a rule

Sandy is making necklaces with colored beads.
She makes them into triangular patterns like this:

1 triangle   2 triangles   3 triangles
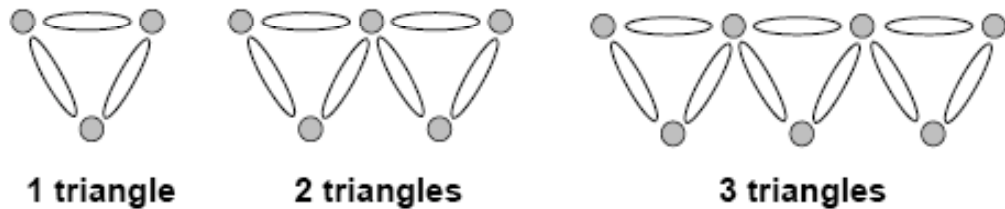
1. In the space below, draw the pattern with 4 triangles.

2. Fill in the table showing the number of round and long beads needed to make 2, 3 and 4 triangles.

Number of triangles	Long beads	Round beads
1	3	3
2	6	
3		
4		

Bead Necklaces   Test 5

Grade Five – 2005

3. How many long beads does Sandy need to make 10 triangles?

_____ long beads

Explain how you figured it out.

_____

_____
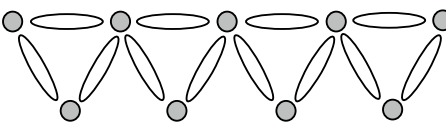
4. How many round beads does Sandy need to make 10 triangles?

_____ round beads

Explain how you figured it out.

_____

_____

5. Sandy uses 41 round beads to make some triangles.
   How many triangles did she make?

_____

Show your work.

10

Grade Five – 2005

Bead Necklaces — Rubric

The core elements of performance required by this task are:
- work with a sequence of bead patterns
- make a rule

Based on these, credit for specific aspects of performance should be assigned as follows

		points	section points
1. Draws:		1	1
2. Gives correct answers:		3	

Number of triangles	Long beads	Round beads
1	3	3
2	6	**5**
3	**9**	**7**
4	**12**	**9**

Partial credit
3 or 4 correct answers   (2)
2 correct answers   (1)   3

	points	section points
3. Gives correct answer: **30**	1	
Gives a correct explanation such as: Each triangle needs 3 long beads, so multiply 10 by 3.	1	2
4. Gives correct answer: **21**	1	
Gives a correct explanation such as: Each triangle needs 2 extra round beads, so add on 6 x 2 for the 9 needed for 4 triangles.	1	2
5. Gives correct answer: **20**	1	
Shows correct work such as: $(41 - 1) \div 2$	1	2
Total Points		**10**

Grade Five – 2005

5th grade   **Task 3**   **Wintry Showers**

Student Task	Describe the data, and measures of center, that were recorded for the wintry shower days in five cities.
Core Idea 5 **Data Analysis**	**Display, analyze, compare and interpret different data sets.** • Interpret data to answer questions about a situation • Use measures of center (mean and median) and understand what each does or does not indicate about the data set • Communicate mathematical thinking clearly and coherently

Grade Five – 2005

Wintry Showers

This problem gives you the chance to:
• describe data and use measures of center

During the 3 months of winter (about 90 days) wintry showers were recorded in the following cities on these numbers of days.

City	# days of wintry showers
Atlanta	30
Los Angeles	20
Chicago	45
New York	32
Houston	28

1. Which city has wintry showers on about half the days in winter?

   _____

2. Which three cities have wintry showers on about a third of the winter days?

   _____

   Explain how you figured this out.

   _____

   _____

3. What is the mean number of days of wintry showers for these 5 cities?

   _____

   Show how you figured this out.

4. Which city has the median number of days of wintry showers?

   _____

   Show your work.

9

Grade Five – 2005

Wintry Showers   Test 5

Winter Showers		Rubric

The core elements of performance required by this task are:
• describe data and use measures of center

Based on these, credit for specific aspects of performance should be assigned as follows

		points	section points
1.	Gives correct answer: **Chicago**	1	1
2.	Gives correct answers: **Atlanta, New York, Houston**	1x3	
	Accept: **32, 30, 28** *Gives a correct explanation such as:* In all there are about 90 days of winter. 30 is exactly **one third of 90**. 32 and 28 are approximately 30.	1	4
3.	Gives correct answer: **31**	1	
	Shows work such as: 30 + 20 + 45 + 32 + 28 = 155 and 155 ÷ 5	1	2
4.	Gives correct answer: **Atlanta** and/or **30**	1	
	Shows work such as: 20 28 <u>30</u> 32 45	1	2
	Total Points		**9**

Grade Five – 2005

5ᵗʰ grade   Task 4   Cut Shapes

Student Task	Name the geometric shape that is made from cut folded paper. Determine how to fold and cut paper to result in a given cut shape.
Core Idea 4 Geometry and Measurement	**Analyze characteristics and properties of two-dimensional geometric shapes and understand their attributes.** • Identify, compare, and analyze attributes of two-dimensional shapes • Understand line symmetry and predict the results of cutting on folded paper

Grade Five – 2005

Cut Shapes

This problem gives you the chance to:
- recognize and name 2-D shapes
- interpret different representations of shapes

Tom folds a piece of paper in half then in half again.

He cuts off the folded corner with one straight cut.
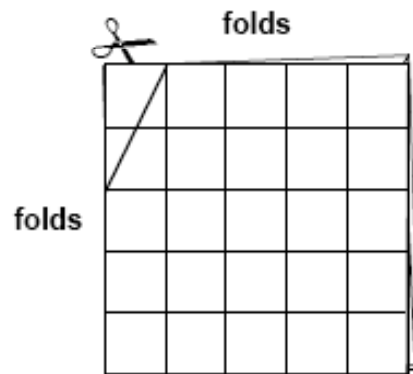
Tom unfolds the shape he cuts off the corner.

1. a. Draw Tom's shape.
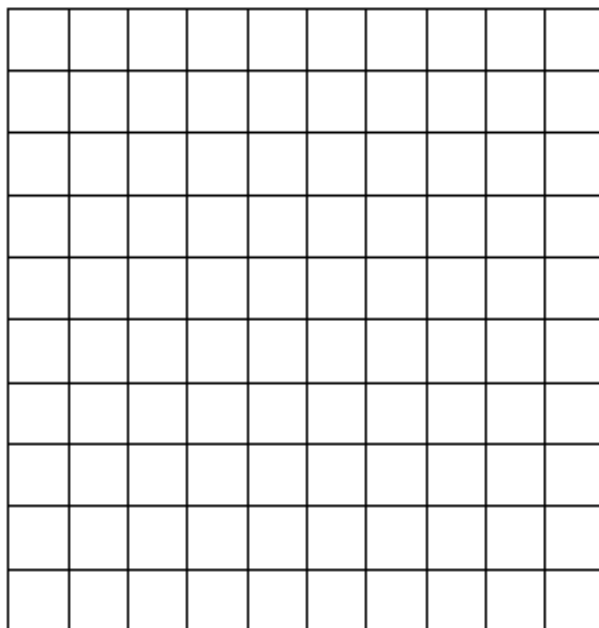
b. What is the name of Tom's shape?

_____
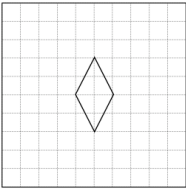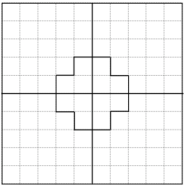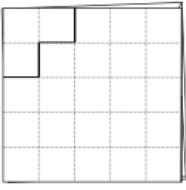
Here is another shape that Tom cut out from the corner of a piece of paper folded twice.
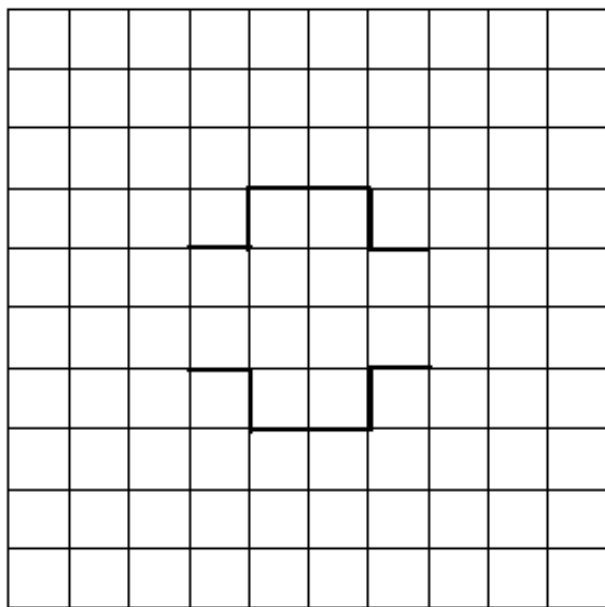
2. a. Draw the fold lines on this shape.

    b. Show how the corner of the folded paper is cut to make this shape.

folds

folds

7

Cut Shapes   Test 5

Grade Five – 2005
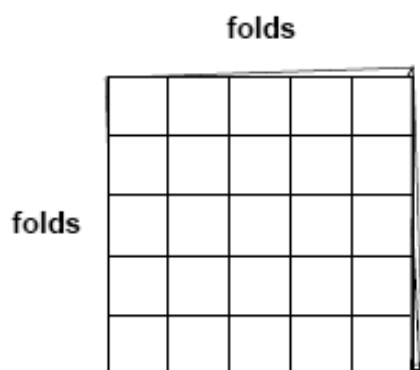
Cut Shapes

Rubric

The core elements of performance required by this task are: • recognize and name 2-D shapes • interpret different representations of shapes Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. a. Correct shape (rhombus) drawn in any orientation: Diagonals length 4 squares, width 2 squares *Partial credit* Correct shape with incorrect dimensions.	2 (1)	
b. Gives correct answer: rhombus or parallelogram or quadrilateral.	1	
		3
2. a. Both fold lines drawn and no incorrect lines *Partial credit* Draws one of fold lines and no incorrect lines	2 (1)	
b. Correct lines drawn on folded paper *Partial credit* 1 point for partially correct attempt	2 (1)	
		4
Total Points		**7**

Grade Five – 2005

5th grade   Task 5   Fractions

Student Task	Position fractions along a number line and justify their placements.
Core Idea 1 Number Properties	**Understand numbers, ways of representing numbers, relationships among numbers, and number systems.** • Use models, benchmarks, and equivalent forms to judge the size of fractions • Understand the place-value structure of the number system including being able to represent and compare fractions • Communicate mathematical thinking clearly and coherently

Grade Five – 2005

Fractions

This problem gives you the chance to:
- show the position of fractions on a number line
- compare the sizes of fractions
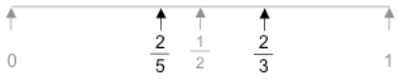
Here is a number line.
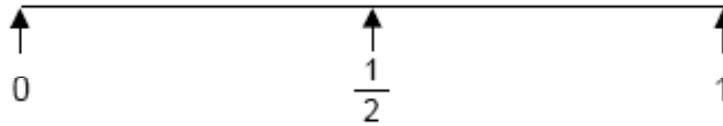
1. Mark the position of the two fractions $\frac{2}{3}$ and $\frac{2}{5}$ on the number line.

2. Explain how you decided where to place $\frac{2}{3}$ and $\frac{2}{5}$ on the number line.

_____

_____

_____

3. Which of the two fractions, $\frac{2}{3}$ or $\frac{2}{5}$, is nearer to $\frac{1}{2}$? _____

Explain how you figured it out.

_____

_____

_____

_____

6

Fractions   Test 5

Fractions		Rubric

The core elements of performance required by this task are: • show the position of fractions on a number line • compare the sizes of fractions Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. Fractions correctly marked on the number line: $2/5$ to the left of $1/2$ $2/3$ to the right of $1/2$	 1 1	 2
2. Gives correct explanation such as: $2/5$ is less than $1/2$ and $2/3$ is more than $1/2$ Accept explanations based on diagrams.	1	 1
3. Gives correct answer: **2/5** dependent on some correct explanation/work Shows work such as: $2/3 = 20/30$ $2/5 = 12/30$ $1/2 = 15/30$ so $2/5$ is nearer to $1/2$ **or** Accept diagrams showing the line divided into 5 equal parts, and three equal parts, with $2/3$ and $2/5$ correctly marked. *Partial credit* Correct reasoning with arithmetical errors.	1 2 2 (1)	 3
Total Points		**6**

Grade Five – 2005

Core Idea	Task	Score
Number Properties	**Family Party**	
This task asks students to use common fractions and percentages to describe groups of relatives attending a party. Successful students could interpret data from a table and describe it as a fraction of the whole. Given a common percentage, students could identify which groups of data represented the given amount.		
Patterns, Functions, and Algebra	**Hexagons in a Row**	
This task asks students to find and extend a geometric pattern and make predictions. Successful students identify how a pattern is growing and use that information to describe, draw, and extend the pattern. Students should also be able to work backwards from a total in the pattern to finding its location in the pattern.		
Data Analysis	**Fig Pudding**	
This task asks students to analyze data in frequency and graphical form, work with metric units, make mathematical comparisons about important features of the data and use a ratio to make conversions in a recipe. Successful students read and interpret graphs with scales of 25. Students were able to make comparisons of the data using multiplication and subtraction. Some successful students were able to think about increasing a recipe 1 1/2 times.		
Number Operations	**Pepe's Party**	
This task asks students to use a variety of operations to find the cost of items for a party, including reasoning about remainders in a familiar setting, and making comparisons of different options to find the best price. Successful students could use multiplication and division in context to reason about the number of packages needed to get a total and find the cost of the packages. Students were also able to make comparisons to find the best option for buying hats.		
Geometry and Measurement	**Rabbit Playpen**	
This task asks students to find the dimensions and areas of rectangles representing rabbit playpens. Use proportional reasoning and rates to find the number of rabbits that can fit in a playpen. Successful students could find different dimensions for rectangles with the same total perimeter. Students were able to calculate the area of a rectangle and identify the shape with the largest area. Students were able to use proportional reasoning to find the number of rabbits that would fit in a given area.		

Family Party

This problem gives you the chance to:
• work with commonly used fractions and percentages in a real context

Andrea invites some of her relatives to a party.

She invites: 12 cousins

6 aunts

4 brothers

2 sisters

1. What fraction of her party guests are cousins?   _____

   Show how you figured this out.

2. What fraction of her guests are aunts and sisters?   _____

   Show how you figured this out.

3. Which group of relatives makes up 25% of her guests?   _____

   Show how you figured this out.

4. Which three groups of relatives make up 75% of her guests?

   _____

   Explain how you figured this out.

   _____

   _____

Family Party   Test 5

8

Fifth Grade – 2006

Family Party		Rubric

The core elements of performance required by this task are: • work with commonly used fractions and percentages in a real context Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. Gives correct answer: **half** or **1/2** or 12/24 or 0.5 or 50%	1	
Shows work such as: 12 + 6 + 4 + 2 =24 12 is half of 24	1	2
2. Gives correct answer**: 1/3** or equivalent	1	
Shows work such as: 6/24 + 2/24 = 8/24 = 1/3	1	2
3. Gives correct answer**: aunts** accept sisters and brothers	1	
Shows work such as: 6/24 =1/4 = 25% (2 + 4 = 6)	1	2
4. Gives correct answer**: cousins, brothers and sisters**	1	
Gives correct explanation such as: This makes a total of 18. 18/24 = 3/4 = 0.75 = 75%	1	2
Total Points		**8**

Fifth Grade – 2006

Hexagons in a Row

This problem gives you the chance to:
• find a pattern in a sequence of diagrams
• use the pattern to make a prediction

Joe uses toothpicks to make hexagons in a row.
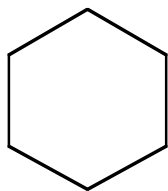
1 hexagon
6 toothpicks
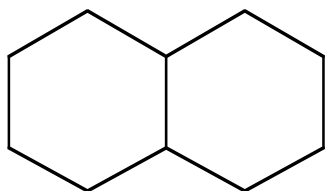
2 hexagons
11 toothpicks
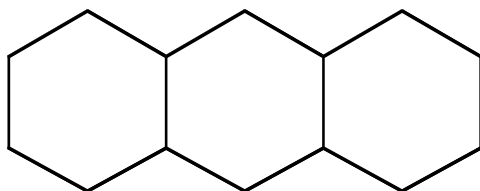
3 hexagons
16 toothpicks
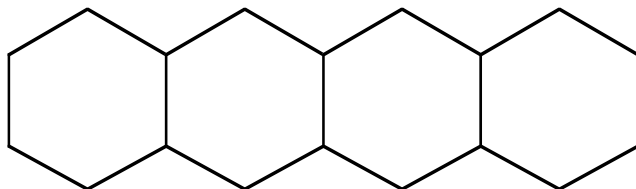
4 hexagons

Joe begins to make a table to show his results.

Number of hexagons in a row	1	2	3	4
Number of toothpicks	6	11		

1. Fill in the empty spaces in Joe's table of results.

Fifth Grade – 2006

2. How many toothpicks does Joe need to make 5 hexagons? _____

Explain how you figured it out.

_____

_____

3. How many toothpicks does Joe need to make 12 hexagons? _____

Explain how you figured it out.

_____

_____

_____

4. Joe has 76 toothpicks.

How many hexagons in a row can he make? _____

Explain how you figured it out.

_____

_____

_____

8

Hexagons in a Row   Test 5

Hexagons in a Row		Rubric
The core elements of performance required by this task are: • find a pattern in a sequence of diagrams • use the pattern to make a prediction Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. Gives correct answers: **16** and **21**	1	1
2. Gives correct answer: **26**	1	
Gives correct explanation such as: I added on 5: accept diagrams	1	2
3. Gives correct answer: **61**	1	
Gives correct explanation such as: The first hexagon needs 6 toothpicks; each extra needs 5. $6 + 11 \times 5 =$ Accept diagrams or adding on.	1	2
4. Gives correct answer: **15**	1	
Gives correct explanation such as: The first hexagon needs 6 toothpicks; each extra needs 5. $76 - 1 = 75, 75 \div 5 = 15$ Accept diagrams	1 1	3
Total Points		**8**

Fifth Grade – 2006

Fig Pudding

This problem gives you the chance to:
- work with metric units
- use ratio to convert a recipe

Dora and Jack have found a recipe for spiced fig pudding in an Australian cookbook.

This is a recipe for 6 people.

225 grams dates	75 grams raisins
175 grams figs	50 grams ginger
175 grams breadcrumbs	100 grams shortening
50 grams flour	

Dora and Jack draw a bar graph to show the amounts of the ingredients.
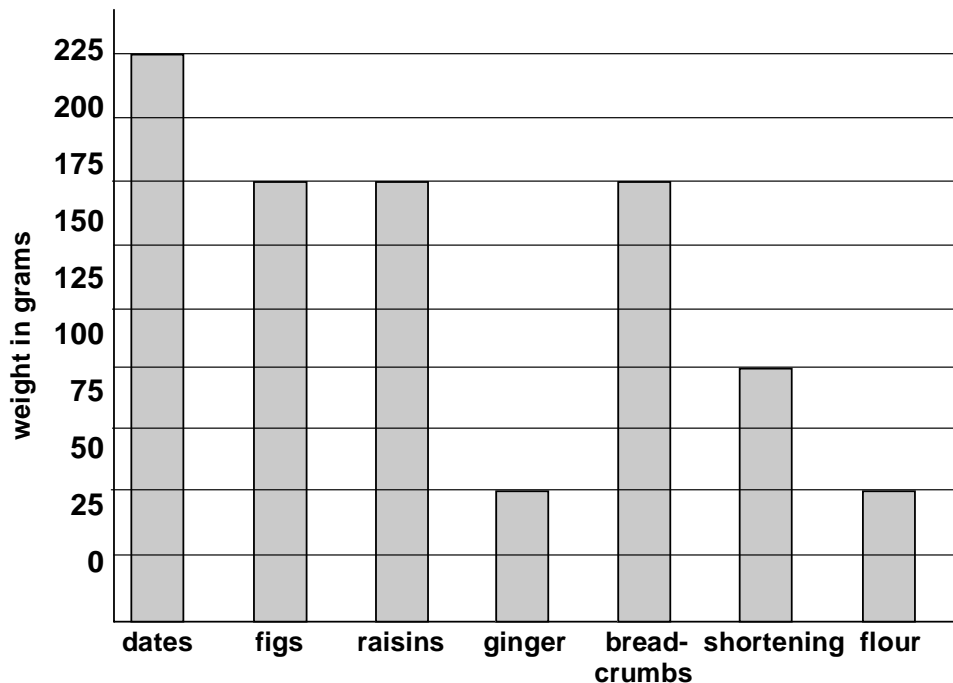
1. One of the bars is not correct.

   Which one is not correct? _____

   What mistake has been made?

   _____

   _____

Fig Pudding   Test 5

2. Dora and Jack write some information about the ingredients.

   • The heaviest of the ingredients are the dates.
   • There is twice as much shortening as flour in the recipe.
   • There are 50 grams more figs than ginger.

   Underline the sentence that is **not** correct.

   Explain how the information is **not** correct.

   _____

   _____

   Look at the list of ingredients. Write two sentences of your own comparing the amounts of ingredients.

   _____

   _____

   _____

   _____

3. This recipe is for 6 people. How many grams of shortening are needed to make a pudding for 9 people?

   _____ grams

   Explain how you figured this out.

   _____

   _____

Fig Pudding   Test 5

6

Fig Pudding		Rubric
The core elements of performance required by this task are: • work with metric units • use ratio to convert a recipe Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. Gives correct answer: **raisins** **and** explains that it should be 75 grams, not 175 grams	1	1

2.   Underlines 'There are 50 grams more figs than ginger.'
      and
      Gives a correct explanation such as:
      It should be 125 grams more figs than ginger.
 	
      Writes statements such as:
      There is the same amount of figs as breadcrumbs.
      There is three times the amount of raisins as dates.
	1
	
	1
	1
		3

3.   Gives correct answer: **150** grams
 	
      Gives correct explanation such as:
      100 grams is for 6 people, so 9 people would need half as much again.
	1
	
	1
		2

Total Points		**6**

Fifth Grade – 2006

Pepe's Party

This problem gives you the chance to:
• use numbers and prices in a real situation

Pepe is having a party.

There will be 20 people at the party.

Here is the price list for things Pepe needs.

Party supplies!	
Plastic knife, fork, and spoon set	30¢
Package of 10 paper plates	$2.75
Package of 5 paper cups	$1.50

1. Complete the table to show the prices for 20 plastic knives, 20 forks, and
   20 spoons, 20 paper plates and 20 paper cups.

	Number of packages	Price
Plastic knife, fork, and spoon set		$
Paper plates		$
Paper cups		$

Show your calculations.

Pepe's Party   Test 5

Fifth Grade – 2006

2. Pepe also wants to buy 20 party hats.

A package of 8 hats costs $1.50. The shop will not split a package.

The price of 1 hat is 30¢.

What is the cheapest price for 20 hats? $ _____

Explain how you figured it out.

_____

_____

_____

_____

_____

_____

_____

10

Pepe's Party   Test 5

Fifth Grade – 2006

Pepe's Party		Rubric

The core elements of performance required by this task are:
• use numbers and prices in a real situation

Based on these, credit for specific aspects of performance should be assigned as follows

		points	section points
1. Gives correct answer for knives, forks and spoons: **$6** Shows work such as: 20 x 30		1 1	
Gives correct answer for plates: $**5.50** Shows work such as: 2 x 2.75		1 1	
Gives correct answer for cups: $**6** Shows work such as: 4 x 1.50		1 1	6
2. Gives correct answer: $**4.20**		1	
Gives correct explanation such as: Price of 20 x 1 hats is 20 x 30¢ = $6 Price of 3 packs of 8 hats is 3 x $1.50 = $4.50 Cheapest price is (2 x 8 + 4) hats. Price of (2 x 8 + 4) hats is 2 x $1.50 + 4 x 30¢ = $4.20		 1 1 1	4
	Total Points		**10**

Rabbit Playpen

This problem gives you the chance to:
• find dimensions and areas of rectangles

Patsy is making a playpen for rabbits in her backyard.

The fence around the playpen will be 20 feet long.

Patsy draws diagrams showing how the fence could be arranged to make five different rectangular playpens for her rabbits.

```
 ___    ____    _____    _____    _____
|   |  |    |  |     |  |       |  |         |
| A |  | B  |  |  C  |  |       |  |         |
|   |  |    |  |     |  |   D   |  |    E    |
|   |  |    |  |     |  |       |  |         |
|   |  |    |  |_____|  |_____|  |_____|
|   |  |    |
|   |  |____|
|   |
|___|
```
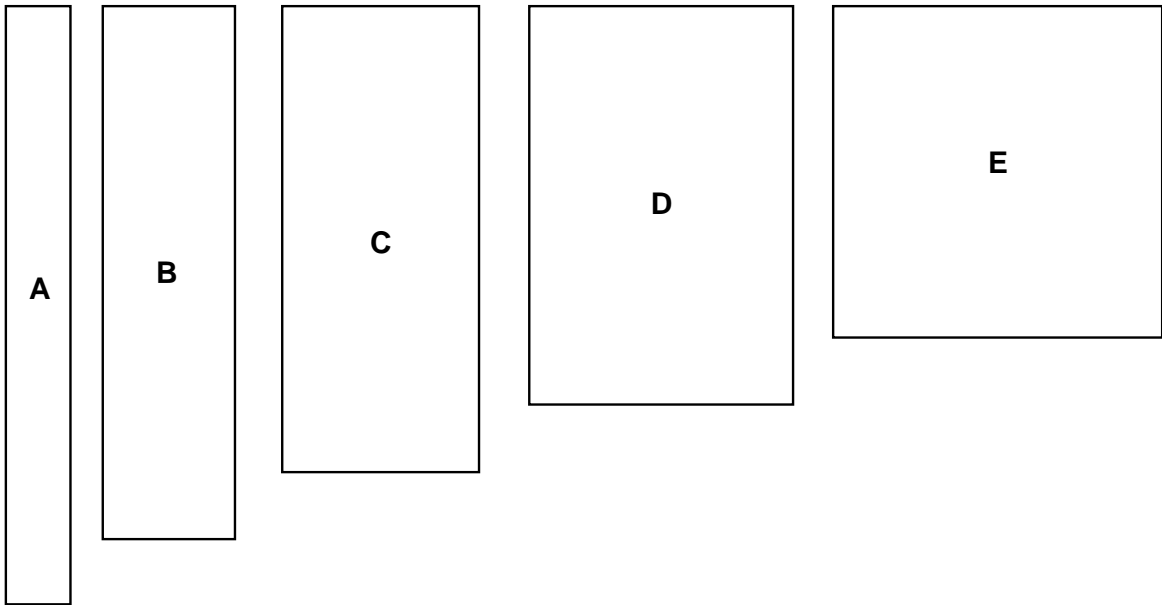
Playpen A is 9 feet long and 1 foot wide. It has an area of 9 square feet.

Playpen B is 8 feet long and 2 feet wide. It has an area of 16 square feet.

1. Find the measurements of the other three playpens.

Playpen C is _____ feet long and _____ feet wide.

Playpen D is _____ feet long and _____ feet wide.

Playpen E is _____ feet long and _____ feet wide.

Rabbit Playpen   Test 5

Fifth Grade – 2006

2. The bigger the area of the playpen, the more rabbits it will hold.

   Find the areas of playpens C, D and E.

   Playpen C   _____ square feet
   Show your calculations.

   Playpen D   _____ square feet
   Show your calculations.

   Playpen E   _____ square feet
   Show your calculations.

3. Patsy wants as many rabbits as possible to romp around in her playpen.
   The Rabbit Center has advised Patsy that she needs an area of at least 5 square
   feet for each rabbit.

   How many rabbits can Patsy place in the playpen with the biggest area?

                                                            _____

   Explain how you figured it out.

   _____

   _____

   _____

   8

Rabbit Playpen   Test 5

Fifth Grade – 2006

Rabbit Playpen		Rubric

The core elements of performance required by this task are: • find dimensions and areas of rectangles Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. Gives correct answers: Playpen C: **7** feet long and **3** feet wide Playpen D: **6** feet long and **4** feet wide Playpen E: **5** feet long and **5** feet wide	1 1 1	3
2. Gives correct answer: Playpen C, **21** square feet Gives correct answer: Playpen D, **24** square feet Gives correct answer: Playpen E, **25** square feet Deduct one point if calculations not shown	1ft 1ft 1ft	3
3. Gives correct answer: **5** rabbits Gives correct explanation such as: I divided the area of Playpen E by 5.	1ft 1	2
Total Points		**8**

Balanced Assessment Test –Fifth Grade 2007

Core Idea	Task
Number Operations	**Candies**
This task asks students to use pictures and diagrams to think about fractions and ratios in the context of sharing candies. Successful students can work backwards from a total to find the amount of each part of the ratio. Students are also asked to extend a ratio to a larger quantity.	
Patterns, Functions, and Algebra	**Joyce's Rug**
This task asks students to find and extend a geometric pattern and to make predictions. Students are asked to identify how the pattern is growing and use that information to describe, draw, and extend the pattern. Successful students should also be able to work backwards from a total in the pattern to find its location in the pattern.	
Rational Numbers	**Cindy's Cat**
This task asks students to add and subtract fractions with unlike denominators. Students may use common denominators, decimals, or percents to help them think about the relationships. The problems involve multiple steps to find the answers. Successful students could also convert a fraction to find out the number of times something would happen out of 100.	
Data Analysis	**Granny's Balloon Trip**
This task asks students to use a table of time and height above ground to make a line graph of granny's trip. Students used the graph to read and interpret information needed to ask answer questions about the trip: e.g. how high was the balloon at 5:50 pm. Students needed to think about a vertical scale going up in increments of 50 yards. Successful students were able to read and interpret the horizontal scale increasing in 30-minute intervals.	
Geometry	**Shape Hunting**
This task asks students to identify 3-dimensional shapes from a list of attributes. Students were asked to give attribute clues to help someone identify a 3-dimensional shapes when given a picture of the shape. Students were asked to think about the number of faces, shape of the faces, number of vertices, and number of edges. Successful students could also give clues about a 3-dimensional shape given the name.	

Candies

This problem gives you the chance to:
• work with fractions and ratios

1. This is Amy's box of candies.
   She has already eaten 6 of them.
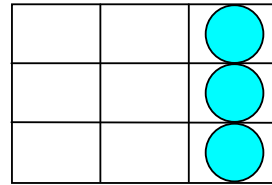
   What fraction of the candies has Amy eaten? _____

2. Valerie shares some of the 12 candies from this box.
   She gives Cindy 1 candy for every 3 candies she
   eats herself.
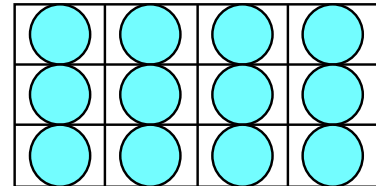
   How many candies does she give to Cindy? _____
   Show how you figured this out.

3. In a packet of mixed candies there are 2 fruit centers for every 3 caramel centers.
   There are 30 candies in the packet.

   How many caramel centers are there? _____
   Show how you figured this out.

4. Anthony makes candies.
   First, he mixes 1 cup of cream with 2 cups of chocolate.
   In all, he uses 9 cups of these two ingredients.
   How many cups of chocolate does he use in this candy recipe? _____

   Explain how you figured this out.

   _____

   _____

8

Candies   Test 5

Task 1: Candies		Rubric

The core elements of performance required by this task are: • work with fractions and ratios Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. Gives correct answer: **2/3** or **6/9**	1	1
2. Gives correct answer: **3** Shows work such as: $1 + 3 = 4$ $12 \div 4 =$ Accept diagrams.	1 1	2
3 Gives correct answer: **18** Shows work such as: $2 + 3 = 5$ $30 \div 5 = 6$ $6 \times 3 =$ Accept diagrams.	2 1	3
4. Gives correct answer: **6** Gives a correct explanation such as: Anthony mixes a ratio of one cup of cream to two cups of chocolate. The ratio stays the same for different amounts. So I wrote the numbers in a chart like this 1 to 2 = a total of 3 2 to 4 = a total of 6 3 to 6 = a total of 9 Accept diagrams.	1 1	2
Total Points		**8**

Candies Test 5

Joyce's Rugs

This problem gives you the chance to:
• describe and extend patterns

Joyce makes patterned rugs.
This is one of her designs.

The design has 2 stripes and 2 circles.

Rug #1

She makes the rugs in different lengths.
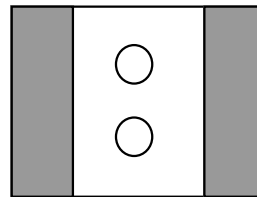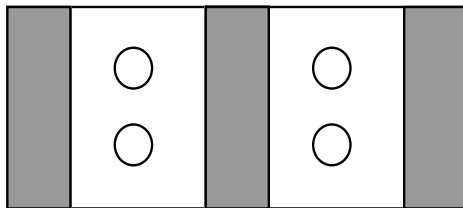
Rug #2.
It has 3 stripes and 4 circles.
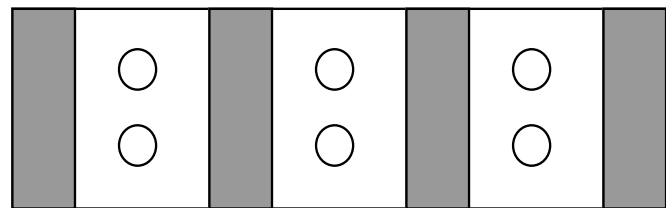
Rug #3.
It has 4 stripes and 6 circles.

Draw a sketch of Rug #4.

2. Here is a table that helps Joyce to work out her rug length designs.

Rug #	1	2	3	4	5
Number of stripes	2	3	4		
Number of circles	2	4	6		

Complete the table to show how many stripes and circles there are on Rug #4 and Rug #5.

Joyce's Rugs   Test 5

3. How many circles are there on Rug #11?   _____

   Explain how you figured it out.

   _____

   _____

   _____

4. A rug has 24 stripes. How many circles does it have?   _____

   Tell how you figured it out.

   _____

   _____

   _____

Joyce's Rugs   Test 5

Task 2: Joyce's Rugs — Rubric

The core elements of performance required by this task are:
• describe and extend patterns

Based on these, credit for specific aspects of performance should be assigned as follows

		points	section points
1.	Draws correct diagram for the Rug #4.	1	1
2.	Gives correct answers for Rugs # 4 and #5: **5 6**	1	
	8 10	1	2
3.	Gives correct answer: **22**	1	
	Gives a correct explanation or draws diagrams to show that each rug has twice as many circles as its rug number.	1	2
4.	Gives correct answer: **46**	1	
	Explanations such as: The pattern number will be 23 because there is one more stripe than the pattern number. Each pattern number has twice that number of circles. So 23 x 2 = 46.	1 1	3
	Total Points		**8**

8

Joyce's Rugs   Test 5

Cindy's Cats

This problem gives you the chance to:
• solve fraction problems in a practical context

Cindy has 3 cats: Sammy, Tommy and Suzi.
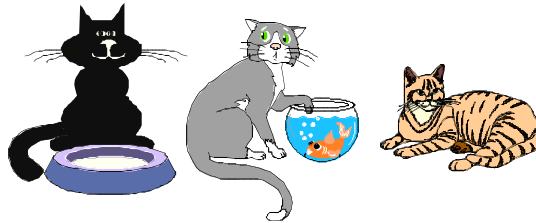
1. Cindy feeds them on Cat Crunchies.

    Each day Sammy eats $\frac{1}{2}$ of the box, Tommy eats $\frac{1}{8}$ of the box and Suzi eats $\frac{1}{4}$ of the box.

    What fraction of a whole box do the cats eat, in all, each day? _____

    Show how you figured this out.

2. Tommy and Suzi spend much of each day sleeping.

    Tommy sleeps for $\frac{3}{5}$ of the day and Suzi sleeps for $\frac{7}{10}$ of the day.

    Which of the two cats sleeps for longer? _____

    How much longer does it sleep each day? _____

    Show how you figured this out.

Cindy's Cats   Test 5

3. Cindy's cats often share a carton of cat milk.

Sammy always drinks $\frac{1}{3}$ of the carton, Tommy always drinks $\frac{5}{12}$ of the carton, and Suzi always drinks $\frac{1}{6}$ of the carton.

What fraction of the carton of cat milk is left over?   _____

Show how you figured it out.

4. Cindy's cats love to jump in and out of their cat door.

Yesterday the cat door was used 100 times by her cats.

Sammy used it for $\frac{1}{4}$ of the times and Tommy used it for $\frac{3}{10}$ of the times.

How many times did Suzi use the cat door?   _____

Explain how you figured it out.

_____

_____

_____

_____

8

Cindy's Cats   Test 5

Task 3: Cindy's Cats		Rubric

The core elements of performance required by this task are: • solve fraction problems in a practical context Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. Gives correct answer: **7/8**	1	
Show work such as: $1/2 + 1/4 + 1/8 = 4/8 + 2/8 + 1/8 = 7/8$	1	2
2. Gives correct answer: **Suzi by 1/10** of a day**.** Accept 10% or $2^4/_{10}$ hours	1	
Shows correct work such as: $3/5 = 6/10$ and so $7/10 - 6/10 = 1/10$ Accept work in percents.	1	2
3. Gives correct answer: **1/12**	1	
Shows correct work such as: $1/3 + 5/12 + 1/6 = 4/12 + 5/12 + 2/12 = 11/12$ $12/12 - 11/12 = 1/12$	1	
Partial credit Gives answer 11/12 and shows correct work.	(1)	2
4. Gives correct answer: **45** times	1	

Gives correct explanations such as:
     $1/4 = 25/100$ and $3/10 = 30/100$ So $25 + 30 = 55$
 	
     Therefore Sammy and Tommy used it 55 times. $100 - 55 = 45$
     This means Suzi used it 45 times.
	1	

Partial credit Gives answer such as 9/20, 18/40, or 45% and shows correct work.	(1)	2
Total Points		**8**

Cindy's Cats   Test 5

Granny's Balloon Trip

This problem gives you the chance to:
• represent data using tables and graphs

On her eightieth birthday, Sarah's granny went for a trip in a hot air balloon.

This table shows the schedule of the trip.

Time	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00
Height above the ground in yards	0	150	250	350	500	250	100	0

1. Finish labeling the axes and draw a line graph to show the balloon trip.

Height above the ground in yards

100

50

0

2:30   3:00

Time

Granny's Balloon Trip   Test 5
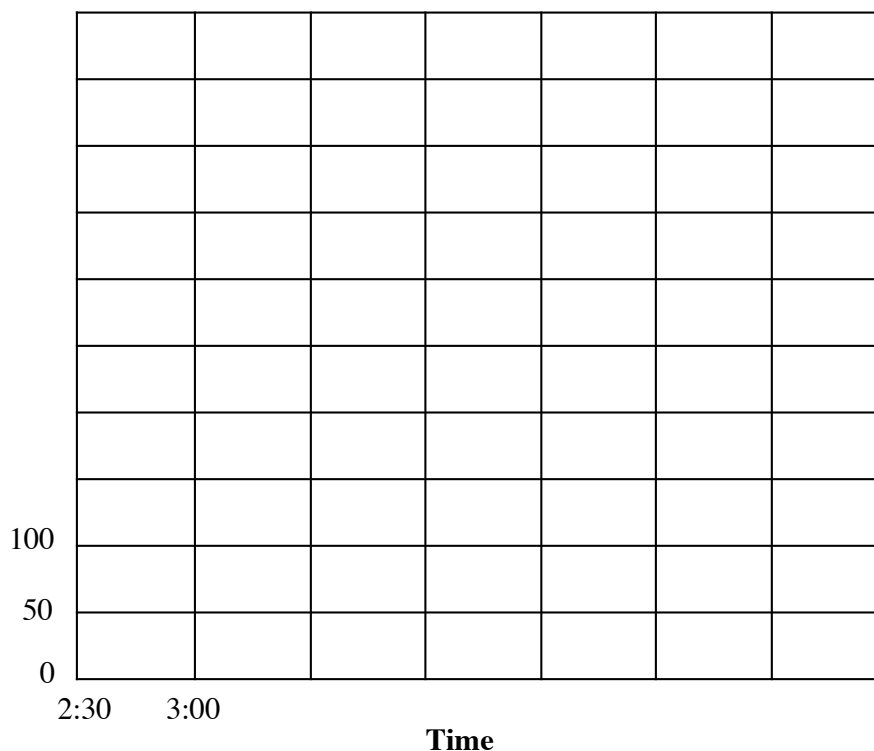
2. For about how long did the balloon stay above 250 yards?

_____

3. At about what time do you think the balloon rose to 400 yards?

_____

Explain how you figured this out.

_____

_____

_____

4. At about what height do you think the balloon was at 5:50?

_____

Explain how you figured this out.

_____

_____

_____

8

Granny's Balloon Trip   Test 5

Task 4: Granny's Balloon Trip	Rubric	

The core elements of performance required by this task are: • represent data using tables and graphs Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. Completes both axes correctly	1	
Completes the line graph correctly	2ft	

Partial credit.
    One point for a partly correct graph such as:
    Correct points marked but line not drawn.
    or Line drawn but one or two incorrect points marked.
	(1)	

		3
2. Gives correct answer: **One and a half hours**	1ft	1
3. Gives correct answer: accept 4:05 through 4:15	1ft	
Gives a correct explanation such as: If you follow the line for 400 yards on the vertical axis and look down the horizontal axis it is about half way between 4:00. and 4:30.	1ft	2
4. Gives correct answer: accept 5 through 35 yards above the ground	1ft	
Gives a correct explanation such as: It was less than 50 yards and more than 0 yards	1ft	2
Total Points		**8**

Granny's Balloon Trip   Test 5

Shape Hunting

This problem gives you the chance to:
• identify and describe solid shapes

Detective Sherlock Shapehunter tracks down solid shapes
using clues provided by eyewitnesses.

Here are some eyewitness reports. Which shapes do they describe?

1. This shape has 6 square faces.
    It does not roll.
    It is a regular prism.
    It has 8 vertices and 12 edges.

    This shape is a _____.

2. This shape has one curved surface that meets at a point.
    Its base is one flat circular surface.

    This shape is a _____.

3. This shape has one curved surface.
    It has 2 flat ends that are congruent circles.

    This shape is a _____.

4. An eyewitness saw this shape.
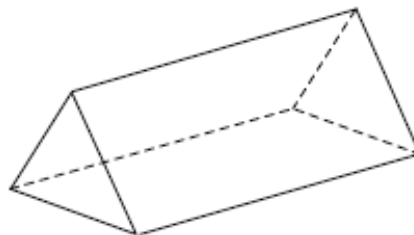
    Write three clues that describe it.

    _____

    _____

    _____

    _____

    The name of this shape is _____.

Shape Hunting   Test 5

5. Write three clues that would help Detective Sherlock Shapehunter to track down a pyramid on a square base.

_____

_____

_____

_____

6. Detective Sherlock Shapehunter says that a sphere is different from all other solid shapes. Write two clues that describe how it is different from other shapes.

_____

_____

_____

_____

8

Shape Hunting   Test 5

Task 5: Shape Hunting		Rubric	
The core elements of performance required by this task are: • identify and describe solid shapes Based on these, credit for specific aspects of performance should be assigned as follows		points	section points
1. Gives correct answer: cube		1	1
2. Gives correct answer: cone		1	1
3. Gives correct answer: cylinder		1	1
4. Writes three correct clues such as: It has 6 vertices. It has 9 edges. It has 5 faces. 3 faces are rectangular. 2 faces are triangular. Gives a correct name: **Triangular prism** All four items correct. *Partial credit* 1 point for 2 or 3 correct items		2 (1)	2
5. Writes three correct clues such as: It has 5 faces. Four faces are congruent triangles. It has 5 vertices. It has 8 edges. It doesn't roll *Partial credit* 1 point for 2 correct clues.		2 (1)	2
6. Writes two correct clues such as: It has no flat surfaces. It has no edges. It has no vertices. It rolls in all directions.		1	1
Total Points			**8**

Shape Hunting   Test 5

Core Idea	Task	Score
Measurement	**Shopping Bags**	
This task asks students to work with pounds and ounces to find weight of items in a shopping bag. Successful students knew how to convert ounces to pounds and could decide which items to put into the shopping bag so that it wouldn't break.		
Number Operations	**Breakfast Time**	
This task asks students to calculate costs for groups of people eating at a café and find change. Given the size of the bill, successful students could use multiplication or division with decimals to find the number of people served.		
Rational Numbers	**Fruity Fractions**	
This task asks students to use equivalence to change improper fractions to whole numbers. Successful students could create improper fractions to match whole number values.		
Algebra	**Pea Soup**	
This task gives students a chance to use proportional reasoning to think about expanding a recipe. Students need to be able to find the amount of the ingredients for different numbers of peoples, record the information in a table, and graph the data from the table. Successful students could explain how to read the graph, and they could compare the slopes of two lines on the graph.		
Data	**Bar Charts**	
This task asks students to interpret and construct bar charts. Students needed to think about how to make all the bars total to a given number. Then students needed to change one bar on the graph to keep the mode the same. Successful students were able to reason about combining information on the graph to calculate number of total children given the number of families and the children per family.		

Grade 5 – 2008

Shopping Bags

This problem gives you the chance to:
• work with standard units in the customary system

The supermarket's shopping bags can only carry 6 lbs of goods.
Here is Yusef's shopping list.

Item	Weight
laundry detergent	2lbs 10oz
oranges	2lbs 11oz
toothpaste	5oz
pineapple	3lbs 6oz
liquid soap	1lb 1oz
book	7oz
paper tissues	8oz.

16oz = 1lb

Yusef has two shopping bags.
He has already put his laundry detergent in one bag and his oranges in the other.
1. Show what other items Yusef can put in the bags so that the bags don't break.

Bag #1

laundry detergent

Bag #2

oranges
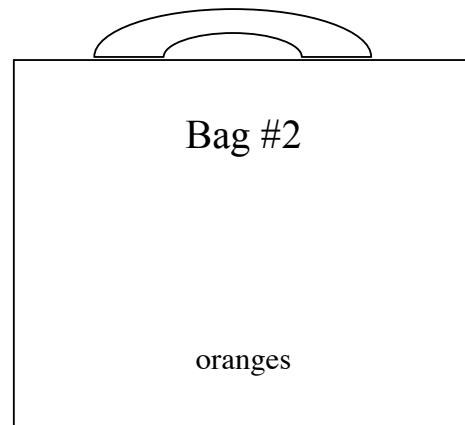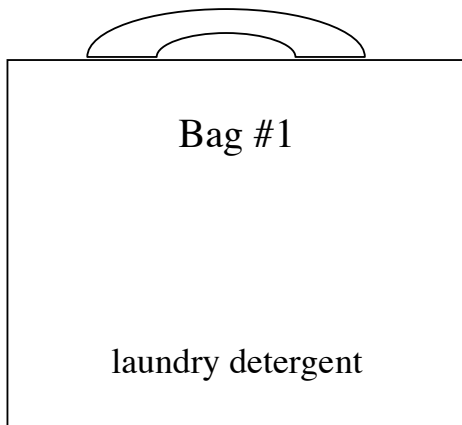
2. What is the weight of the items in Bag #1?   _____
   Show how you figured this out.

3. What is the weight of the items in Bag #2?   _____
   Show how you figured this out.

6

Grade 5 – 2008

Shopping Bags		Rubric
The core elements of performance required by this task are: • work with standard units in the customary system. Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. Gives correct answer: Bag #1 **pineapple**	1	
Gives correct answer: Bag #2 **toothpaste, liquid soap, book, paper tissues**	1	2
2. Gives correct answer: **6 lbs** or 96oz	1ft	
Shows correct work for items in their bag, such as: 2lbs 10 oz + 3lbs 6oz.	1ft	2
3. Gives correct answer: **5 lbs** or 80oz	1ft	
Shows correct work for items in their bag, such as: 2 lb 11 oz + 5 oz + 1 lb 1 oz + 7 oz + 8 oz	1ft	2
Total Points		**6**

Item	Weight	Ounces
laundry detergent	2lbs 10oz	42 oz
oranges	2lbs 11oz	43 oz
toothpaste	5oz	5 oz
pineapple	3lbs 6oz	54 oz
liquid soap	1lb 1oz	17 oz
book	7oz	7 oz
paper tissues	8oz.	8 oz

Grade 5 – 2008

Breakfast Time

This problem gives you the chance to:
• calculate costs and charges for a group

1. Linda had breakfast in a café.
   It cost $12.40. She paid with a $20 bill.
   How much change did Linda get? $_____
   Show how you figured it out.

2.

> ### Basic Continental Breakfast
> **$6.40**
> **each**

A group of nine people had the basic continental breakfast.
How much did they pay in all? $_____
Show your work.

3. A different group of people had the basic continental breakfast.
   They paid $32 in all.
   How many people were in the group?   _____
   Show how you figured it out.

6

Grade 5 – 2008

Breakfast Time		Rubric
The core elements of performance required by this task are: • calculate costs and charges for a group Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. Gives correct answer: **$7.60**	1	
Shows work such as: 20.00 – 12.40	1	
		2
2. Gives correct answer: **$57.60**	1	
Shows work such as: 6.40 x 9	1	
		2
3. Gives correct answer: **5**	1	
Shows work such as: 32 ÷ 6.40 or repeated subtraction	1	
		2
Total Points		**6**

Grade 5 – 2008

Fruity Fractions

This problem gives you the chance to:
• use equivalence to write fractions in simplest form

1. Change these improper fractions into whole numbers.

a.

$\frac{1}{1}$	$\frac{20}{5}$	$\frac{18}{9}$	$\frac{25}{5}$

Then use the code to find the mystery fruit.

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
P	**A**	**L**	**E**	**R**	**U**	**M**	**G**	**S**

Write your answers in the boxes.

Whole number				
Letter			

The name of the fruit is _____ .

b.

$\frac{100}{100}$	$\frac{24}{8}$	$\frac{36}{6}$	$\frac{14}{2}$

Write your answers in the boxes.

Whole number				
Letter			

The name of the fruit is _____.

2. Now it is your turn to make a fraction puzzle to which the answer is GRAPES.
   Use the same code. Write **improper fractions** in the grid to make the fruit.

G	R	A	P	E	S

10

Fruity Fractions

Rubric

The core elements of performance required by this task are:
• use equivalence to reduce fractions to simplest form

Based on these, credit for specific aspects of performance should be assigned as follows

		points	section points
1.a. Gives correct answers: **1 4 2 5** **or** **1 4 5 2** P E A R P E R A All correct 3 points *Partial credit* 3 correct 2 points 2 -1 correct 1 point	3 *(2)* *(1)*		
b. Gives correct answer: **1 3 6 7** **or** **1 6 7 2** P L U M P I N A All correct 3 points *Partial credit* 3 correct 2 points. 2 -1 correct 1 point.	3 *(2)* *(1)*		6

2. Produces a correct grid of improper fractions using the code to give the word GRAPES.   **or**   MELON

G	R	A	P	E	S
8	5	2	1	4	9

All 6 correct 4 points

Partial credit
5 correct 3 points.
4- 3 correct 2 point
2-1 correct 1 point.

M	E	L	O	N
9	4	3	8	7

All 5 correct 4 points

Partial credit
4 correct 3 points.
3 correct 2 points
2-1 correct 1 point.

	points	section points
	4	
	(3)	
	(2)	
	(1)	4

	Total Points	**10**

Grade 5 -2008

Pea Soup

This problem gives you the chance to:
• use proportional reasoning

This is a recipe for Pea Soup.

Pea Soup
For 2 people
1 cup of peas
2 cups of milk
1 onion
Seasoning

1. Carla makes pea soup for 6 people.

   a. How many cups of peas does she need?   _____

   b. How many cups of milk does she need?   _____

2. The graph on the opposite page shows how many cups of peas Carla needs to make the soup for different numbers of people.

   a. Explain how to use the graph to find how many cups of peas Carla needs for 10 people.

   _____

   _____

   b. Complete this table to show the numbers of cups of milk Carla needs for different numbers of people.

Number of people	0	2	4	6	8	10
Number of cups of milk	0	2				

   c. Mark the points in the table on the graph and join the points with a straight line.

Grade 5 – 2008

d. What is the difference between your line and the 'Number of cups of peas' line?

_____

_____

e. Explain why the line for the number of onions Carla needs is the same as the line for the number of cups of peas.

_____

_____
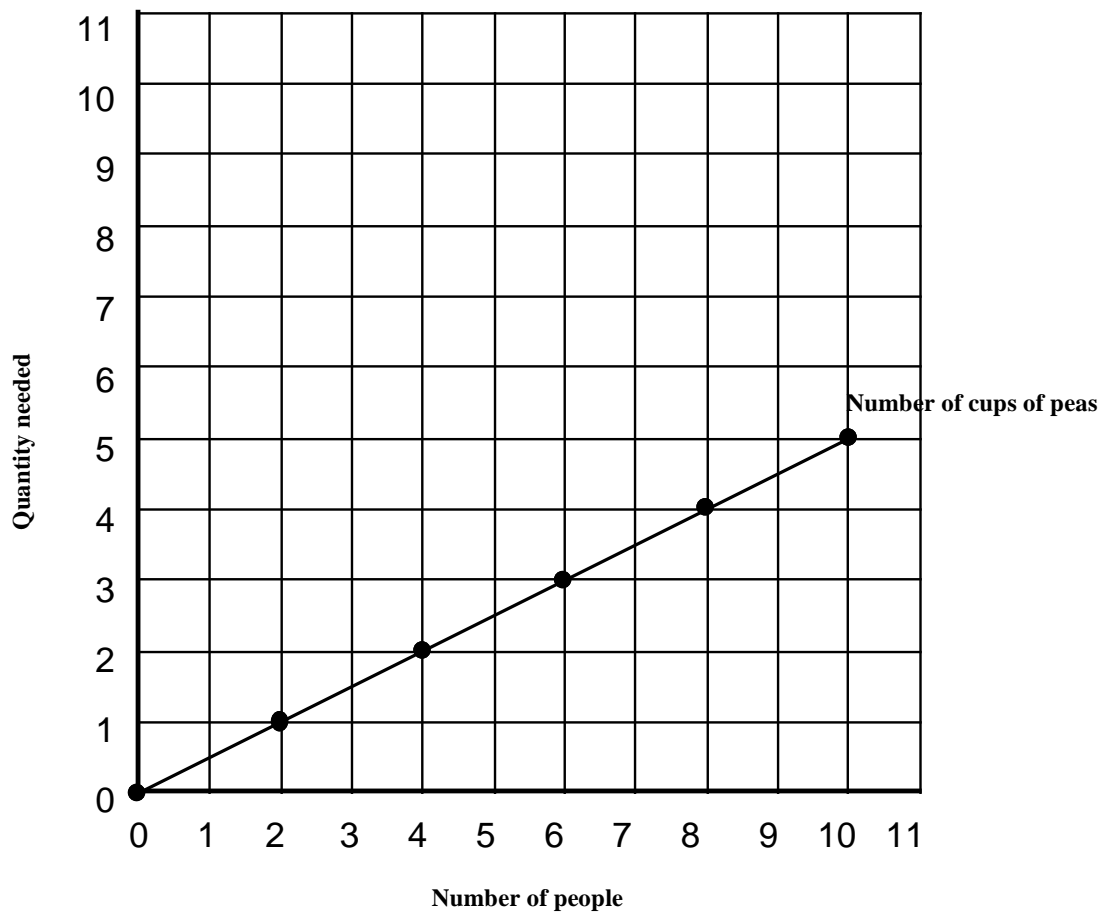
10

Grade 5 – 2008
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Pea Soup		Rubric

The core elements of performance required by this task are: • use proportional reasoning Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1a. Gives correct answer: **3**	1	
1b. Gives correct answer: **6**	1	2
2a. Gives correct explanation such as: Draw vertical and horizontal lines from point to axes. *Partial credit* For a partially correct answer.	2 (1)	
2b. Table correctly completed. *Partial credit* For 2-3 correct numbers in table.	2 (1)	
2c. Points plotted and line drawn correctly. *Partial credit* For 1 error.	2ft (1)	
2d. Makes a correct statement such as: My line is steeper.	1	
2e. Gives a correct explanation such as: The number of onions needed is always the same as the number of cups of peas.	1	8
Total Points		**10**

Table for 2b:

Number of people	0	2	4	6	8	10
Number of cups of milk	0	2	**4**	**6**	**8**	**10**

Grade 5 – 2008

Bar Charts

This problem gives you the chance to:
• interpret and construct bar charts
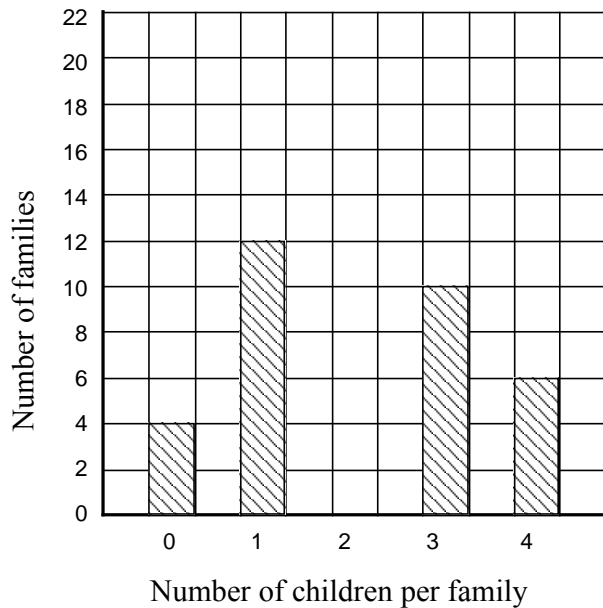
Here is a bar chart about the number of children in families.
The bar to show '2 children per family' is missing.

1. Draw the missing bar so that the total number of families is 50.
   Show how you figured it out.
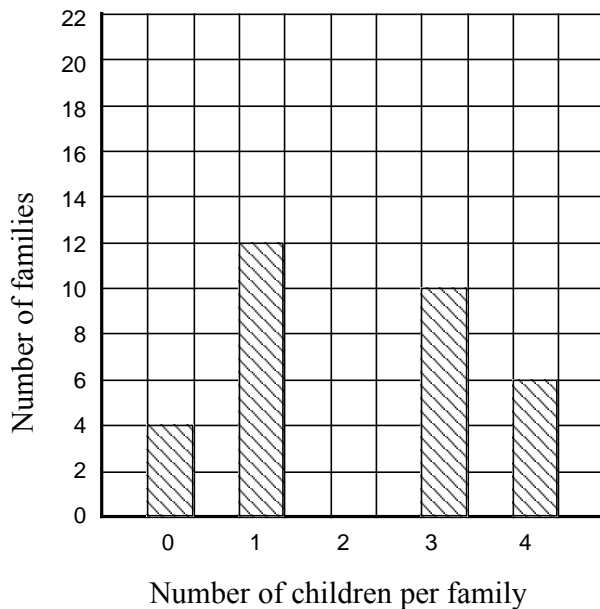
2. Draw the missing bar so that the mode of the number of children per family is 1.

   Explain why there are several different possible answers.

   _____

   _____

   _____

Grade 5 – 2008

Number of children per family

3. Draw the missing bar so that the total number of children is 104.

Show how you figured it out.

8

Bar Charts   Rubric

The core elements of performance required by this task are: • interpret and construct bar charts Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. Shows correct answer: **Bar of height 18 units** Shows work such as: $4 + 12 + 10 + 6 = 32$ $50 - 32 = 18$ *Partial credit* For 1 error	1 2 (1)	 3
2. Shows correct answer: **Bar of height < 12 units** Gives correct explanation such as: Because the bar can be any height less than 12 families.	1 1	 2
3.. Gives correct answer: **Bar of height 19 units** Shows correct work such as: $0 \times 4 + 1 \times 12 + 3 \times 10 + 4 \times 6 = 66$ $104 - 66 = 38$ $38 \div 2$ *Partial credit* For 1 error	1 2 (1)	 3
Total Points		**8**

Grade 5 – 2008

Core Idea	Task	Score
Data	**Lifespan of an Umbrella**	
This task asks students to work with data about umbrellas and calculate mean, median, mode and range. Successful students could explain their thinking and show their work.		
Geometry/Measurement	**Halves**	
This task asks students to compare areas of two shapes and determine if the areas are equal. Successful students could quantify the areas of shapes including triangles or make logical arguments about matching parts.		
Algebra	**Drip, Drip, Drip**	
This task asks students to represent and analyze patterns using tables and graphs. Successful students could plot points on a graph; extend the table or the graph to find out if a bucket to catch dripping water would overflow.		
Number Properties	**Filing Cabinets**	
This task gives students a chance to use fractions, decimals and percents using the filing cabinet for a model. Successful students could find 2/3 or 5/6 of the filing cabinet and reason about the number of 12 drawers to be covered with stickers.		
Number Properties	**Decimals**	
This task asks students to an understanding of decimal numbers. Students are asked to order decimal numbers with different place values and compare decimal values. Successful students could explain how to compare decimals and decide the smallest value.		

The Lifespan of an Umbrella

This problem gives you the chance to:
• use measures of center and understand what each indicates about a data set.

Umbrellas don't seem to last long.
They blow inside out in the wind and the metal spokes break.
Sometimes the material rips and often they just get lost.

Megan's family each bought a new umbrella.
This table shows how many months each umbrella lasted.

Name	Megan	Carl	Mom	Dad	Granny	Grandpa	Jill	Fred	Jo
Months	12	15	30	19	26	6	12	23	46

1. What is the median of this set of data? _____ months
   Show how you figured it out.

2. What is the mode of the life spans of these umbrellas? _____ months
   Explain how you know.

_____

_____

3. What is the range of the life spans of these umbrellas. _____ months

4. Megan read this statement on an internet site of random facts.
   "The mean lifespan of an umbrella is about 23 months."

   She said that the mean lifespan of her family's umbrellas was greater than this.
   Was she correct? _____
   Show how you figured this out.

7

The Lifespan of an Umbrella

2009 Rubrics Grade 5

The Lifespan of an Umbrella	Rubric	
The core elements of performance required by this task are: • use measures of centre and understand what each indicates about a data set. . Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. Gives correct answer: **19** Shows work such as: 6, 12, 12, 15, 19, 23, 26, 30, 46 Accept: "I picked the number in the middle."	1 1	2
2. Gives correct answer: **12** Gives correct explanation such as: The mode of a set of data is the number that occurs the most frequently.	1 1	2
3. Gives correct answer: **6 – 46** Accept 40	1	1
4. Gives correct answer: No **and** shows work such as**:** 12+15+30+19+26+6+12+23+46 = 189 and 189 divided by 9 = 21 *Partial credit* For partially correct work	2 (1)	2
Total Points		**7**

Halves

This problem gives you the chance to:
• show understanding of area

Here is a shape made
from three big squares.
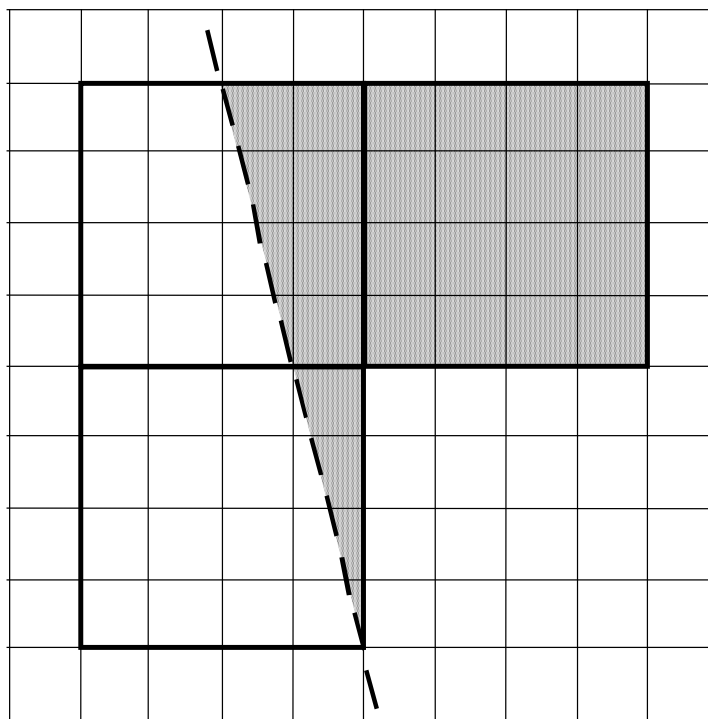
1. A straight line cuts the shape. Explain why the area shaded is equal to the area that is not shaded.

_____

_____

_____

_____

_____

_____

2. Here are three more diagrams of the shape made from three big squares.

Figure out if the shaded part is less than half, exactly half or more than half.

a.
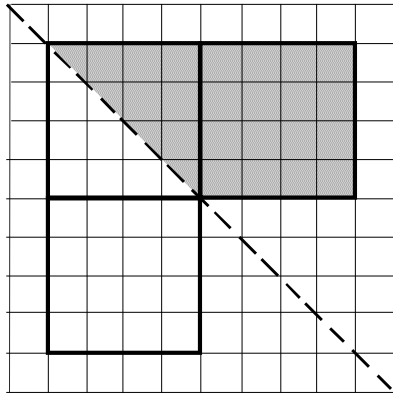
Less than half

Exactly half

More than half

b.

Less than half

Exactly half

More than half

c.

Less than half

Exactly half

More than half

7

Halves

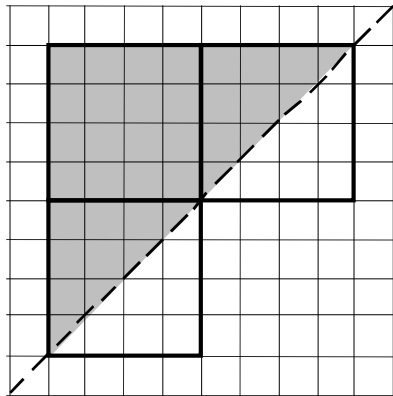| Halves		Rubric
The core elements of performance required by this task are: • show understanding of area Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. Gives complete explanation that Uses unit measures to show equal areas such as 24 square units or 1.5 large squares. Or Matches or moves congruent shapes to compose equal areas. *Partial credit* Uses unit measures to justify equal areas but does not state size of the areas.	4 (2)	
		4
2.a. Gives correct answer: **Exactly half**	1	
b Gives correct answer: **More than half**	1	
c. Gives correct answer: **Less than half**	1	
		3
Total Points		**7**

Grade Five

Drip, Drip, Drip

This problem gives you the chance to:
- represent and analyze patterns using tables and graphs

Ms. Simms, the 5th Grade teacher noticed the classroom roof had a leak.

Today at 9 a.m. she put a measuring bucket under the drip.

The water from the leak dripped steadily.

At 11 a.m. there were 3 liters of water in the bucket.

1. At this rate how many liters of water were in the bucket at 1 p.m.?

_____ liters

.

Time in hours	9 a.m.	11 a.m.	1 p.m.	3 p.m		
Liters of water	0	3				

2. How many liters of water were in the bucket at 3 p.m.?

_____ liters

3. On the grid on the opposite page, plot the four points written in the table.

   Draw a line joining your four points to show the amount of water in the bucket.

4. Use your graph to find how much water was in the bucket at 12 noon.

_____ liters
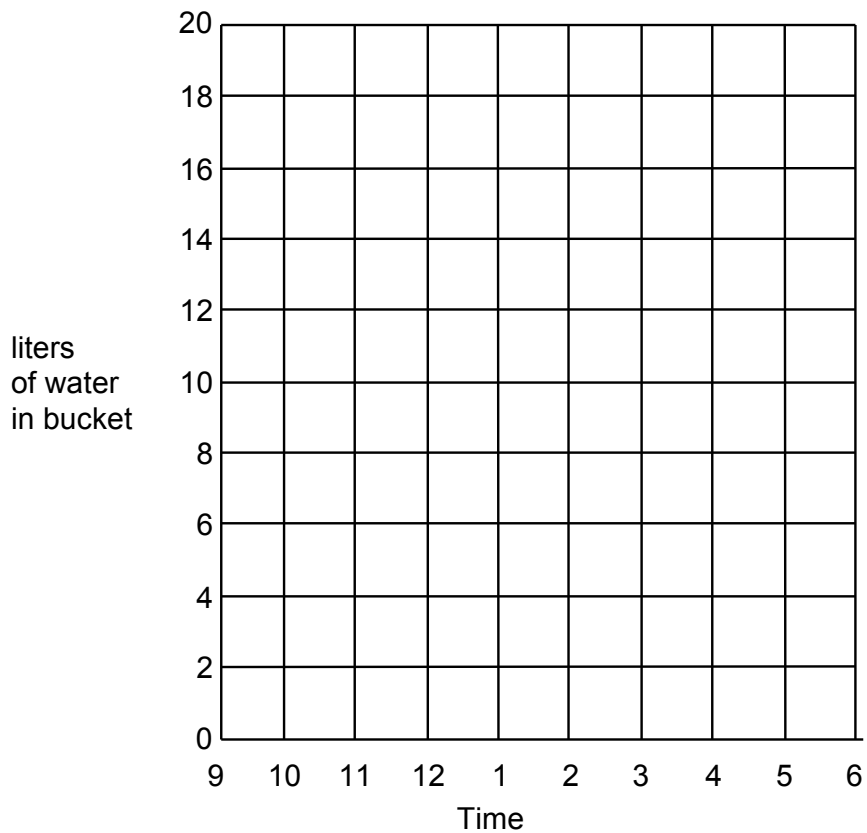
5. At about what time were there 8 liters of water in the bucket?

_____

6. The bucket holds 20 liters of water.
   The school janitor comes to deal with the classroom at 6 p.m.

   Will the bucket have overflowed by then?   _____
   Explain how you figured this out.

_____

_____

_____

8

Drip, Drip, Drip		Rubric

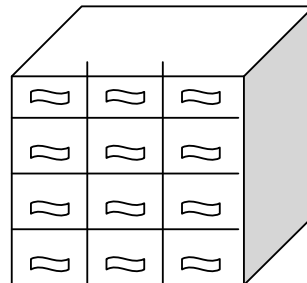| The core elements of performance required by this task are: • to represent and analyse patterns using tables and graphs Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. Gives correct answer: **6** liters	1	1
2. Gives correct answer: **9** liters	1	1

3.   Plots all four points correctly and draws line.
     Partial credit
     1 error
	2 ft
	
	(1)
		2

4. Gives correct answer: **$4^1/_2$** liters (accept more than 4 and less than 5)	1	1
5. Gives correct answer: 2:20 p.m. (accept values more than 2:00 and less than 3:00)	1	1

6.   Gives correct answer: **No**
    and gives explanation such as:
    Uses the graph to show that at 6 p.m. the amount of water in the bucket is about 13 and a half liters
	2	2

Total Points		**8**

Filing Cabinets

This problem gives you the chance to:
• use fractions, decimals and percents in a real situation

Moorwood Elementary School keeps student records in drawers in a big filing cabinet like this.

This filing cabinet takes up too much space, so the school clerical assistant is putting the data onto a computer.

As she completes each drawer she puts a smiley sticker onto the drawer.

1. What fraction of the cabinet has she completed?   _____

   Write this as a decimal.   _____
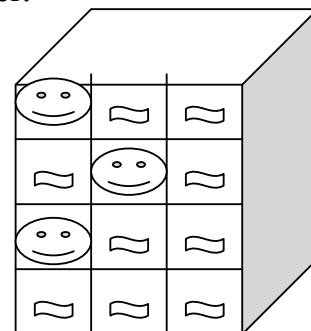
2. Draw a smiley face on the drawers to show what the cabinet might look like when she has completed half of the records.
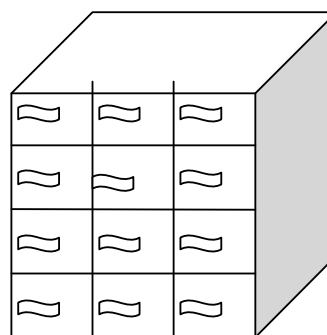
       Write this as a percent.   _____

Filing Cabinets

3. How many more drawers will she now need to complete before she has done 2/3 of the work?
Explain how you figured this out.   _____

_____

_____

4. When she has completed 5/6 of her work, how many drawers will she have left to do?   _____
Show how you figured this out.

9

Filing Cabinets

Filing Cabinets		Rubric

The core elements of performance required by this task are: • use fractions, decimals and percents in a real situation. Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. Gives correct answer: **1/4** or **3/12**	1	
Gives correct answer: 0**.25**	1	2
2. Draws a smiley face on 6 of the drawers.	1	
Gives correct answer: **50%**	1	2
3. Gives correct answer: **2**	1ft	
Gives correct explanation such as: two thirds is the same as eight twelfths. She already has completed 1/2 which was 6/12. 6 from 8 is 2	2ft	
Special case: **1** and explains that 2/3 is 8 drawers, so more than 1/2 (6 drawers) and less than 2/3 is 1 more drawer (7 drawers).	3	
Special case: **5** and finds that 2/3 is 8, 8 – 3 (drawers that are done) is 5.	3	
Partial credit Partially correct explanation.	(1)	3
4. Gives correct answer: **2**	1	
Shows correct work such as: 5/6 of 12 =10 12-10 =2 Accept diagrams.	1	2
Total Points		**9**

Decimals

This problem gives you the chance to:
• show understanding of decimal numbers

1. Write each of this set of numbers in the correct box.
   The box on the left is for numbers smaller than 5.5.
   The box on the right is for numbers bigger than 5.5.

$$5.7 \quad 5.35 \quad 5.025 \quad 5.9 \quad 5.24 \quad 5.473$$

The first one has been done for you.

Numbers smaller than 5.5

Numbers bigger than 5.5

5.7

2. Which number is nearest to 5.5?   _____
   Explain how you figured this out.

   _____

   _____

3. Write down a number of your own that is bigger than 5.24 and smaller than 5.35.

                                                    _____

4. Write the numbers in order from smallest to largest.

   _____

   Explain how you decided which was the smallest number.

   _____

   _____

9

Decimals   Rubric

The core elements of performance required by this task are: • show understanding of decimal numbers Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. Gives correct answers: In the left hand box: **5.35 5.025 5.24 5.473** In the right hand box: (5.7), **5.9** *Partial credit* Lose one point for each number incorrectly placed	3 (2) (1)	 3
2. Gives correct answer: **5.473** Gives a correct explanation such as: It rounds to 5.5 and no other number does.	1 1	 2
3. Gives correct answer: any number larger than 5.24 and less than 5.35	1	1
4. Gives correct answer: **5.025 5.24 5.35 5.473 5.7 5.9** *Partial credit* One error or First and last correct. Gives a correct explanation such as: I looked at the first number after the decimal point and choose zero because it was smallest.	2 (1) 1	 3
Total Points		**9**

Grade Five