

Instructional Materials for WCSD Math Common Finals

The Instructional Materials are for student and teacher use and are aligned to the 2016-2017 Course Guides for the following courses:

- **Geometry S1 (#2211)**
- **Foundations in Geometry S1 (#7771)**

When used as test practice, success on the Instructional Materials does not guarantee success on the district math common final.

Students can use these Instructional Materials to become familiar with the format and language used on the district common finals. Familiarity with standards and vocabulary as well as interaction with the types of problems included in the Instructional Materials can result in less anxiety on the part of the students. The length of the actual final exam may differ in length from the Instructional Materials.

Teachers can use the Instructional Materials in conjunction with the course guides to ensure that instruction and content is aligned with what will be assessed. The Instructional Materials are not representative of the depth or full range of learning that should occur in the classroom.

***Students will be allowed to use a non-programmable scientific calculator on Geometry Semester 1 and Geometry Semester 2 final exams.**

Geometry Reference Sheet

Note: You may use these formulas throughout this entire test.

Linear

Slope $m = \frac{y_2 - y_1}{x_2 - x_1}$

Midpoint $M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$

Distance $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

Slope-Intercept Form $y = mx + b$

Quadratic

Vertex-Form $y = a(x - h)^2 + k$

Standard Form $y = ax^2 + bx + c$

Intercept Form $y = a(x - p)(x - q)$

Exponential

(h, k) Form $y = ab^{x-h} + k$

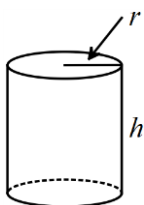
Probability

$P(A \text{ and } B) = P(A) \cdot P(B)$

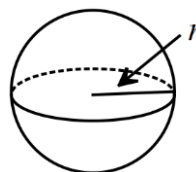
$P(A \text{ and } B) = P(A) \cdot P(B|A)$

$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$

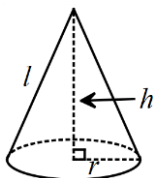
Volume and Surface Area



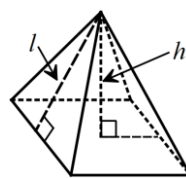
$V = \pi r^2 h$
 $SA = 2(\pi r^2) + h(2\pi r)$



$V = \frac{4}{3} \pi r^3$
 $SA = 4\pi r^2$



$V = \frac{1}{3} \pi r^2 h$
 $SA = \pi r^2 + \frac{1}{2}(2\pi r \cdot l)$



$V = \frac{1}{3} Bh$
 $SA = B + \frac{1}{2}(Pl)$
 Where B =base area
 and P =base perimeter

Multiple Choice: *Identify the choice that best completes the statement or answers the question. Figures are not necessarily drawn to scale.*

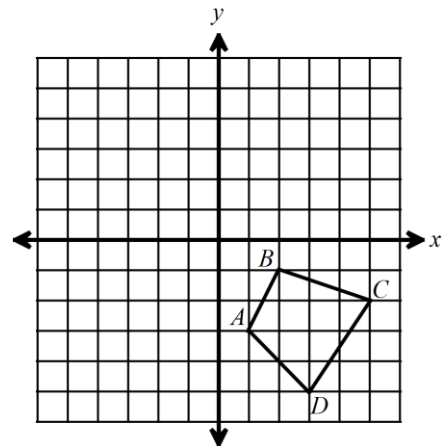
- Describe the transformation $M: (-2, 5) \rightarrow (2, -5)$.
 - A reflection across the y -axis
 - A reflection across the x -axis
 - A rotation 180° with center of rotation $(0, 0)$
 - A rotation 90° with center of rotation $(0, 0)$

- Find the coordinates of the image of the point $(-5, 7)$ when it is reflected across the line $y = 11$.

A. $(-5, 18)$	C. $(-5, -4)$
B. $(-5, 15)$	D. $(-5, -7)$

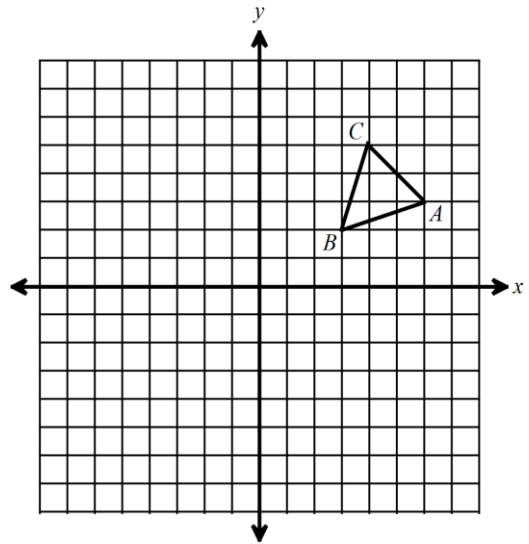
- What are coordinates for the image of quadrilateral ABCD after the translation of $(x, y) \rightarrow (x + 7, y - 2)$?

- $A'(8, -5), B'(2, -1), C'(12, -4), D'(10, -7)$
- $A'(-6, -1), B'(-5, 1), C'(-2, 0), D'(-4, -3)$
- $A'(-6, -5), B'(2, -1), C'(12, -4), D'(10, -7)$
- $A'(8, -5), B'(9, -3), C'(12, -4), D'(10, -7)$



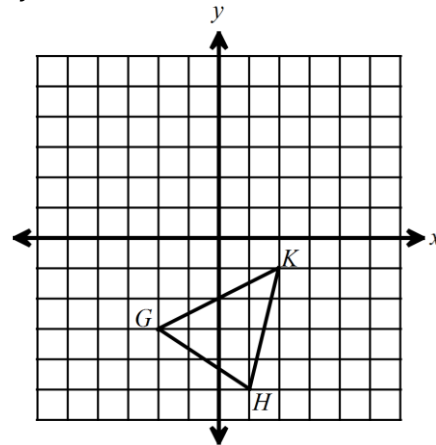
4. Figure ABC is rotated 90° clockwise about the point $(2, 0)$. What are the coordinates of A' after the rotation?

- A. $A'(-1, 4)$
- B. $A'(3, -6)$
- C. $A'(5, -4)$
- D. $A'(6, -3)$



5. What are the coordinates for the image of $\triangle GHK$ after a rotation 90° counterclockwise about the origin and a translation of $(x, y) \rightarrow (x + 3, y + 2)$?

- A. $K''(-2, 0), H''(2, -1), G''(0, -4)$
- B. $K''(2, 0), H''(-2, 1), G''(0, 4)$
- C. $K''(-4, -4), H''(-8, -3), G''(-6, 0)$
- D. $K''(4, 4), H''(8, 3), G''(6, 0)$



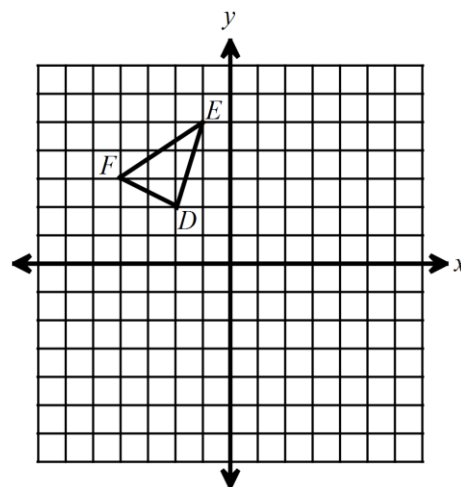
6. The point $P(-2, -5)$ is rotated 90° counterclockwise about the origin, and then the image is reflected across the line $x = 3$. What are the coordinates of the final image P'' ?

- A. $(1, -2)$
- B. $(11, -2)$
- C. $(-2, 1)$
- D. $(2, 11)$

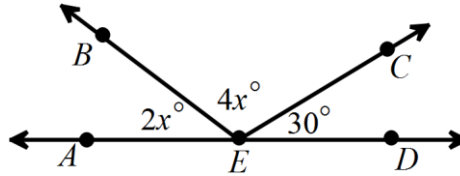
7. Draw line \overleftrightarrow{FG} and point H not on the line. Reflect point H across the line \overleftrightarrow{FG} to form point H' . Based on your diagram, which of the following is true?
- A. $\overline{HF} \cong \overline{FG}$
 - B. $\overline{HF} \cong \overline{H'G}$
 - C. $\overline{FG} \cong \overline{H'G}$
 - D. $\overline{HG} \cong \overline{H'G}$

8. Which composition of transformations maps $\triangle DEF$ into the first quadrant?

- A. Reflection across the line $y = x$ and then a translation of $(x + 2, y + 5)$.
- B. Translation of $(x - 1, y - 6)$ and then a reflection in the line $y = x$.
- C. Clockwise rotation about the origin by 180° and then reflection across the y -axis.
- D. Counterclockwise rotation about the origin by 90° and then a translation of $(x - 1, y + 6)$.

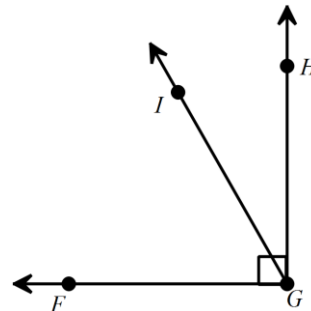


9. Which of the following options correctly explains how to find the value of x in the figure below?



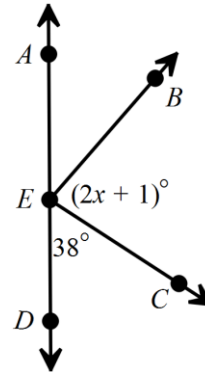
- A. Since \overrightarrow{EA} and \overrightarrow{ED} are opposite rays, and \overrightarrow{EB} and \overrightarrow{EC} are opposite rays, $\angle AEB$ and $\angle DEB$ are vertical angles. Vertical angles are congruent and have the same measure, so $m\angle AEB = m\angle DEC$. Using substitution gives the equation, $2x = 30$. Dividing by 2 on both sides gives $x = 15$.
- B. Since \overrightarrow{EA} and \overrightarrow{ED} are opposite rays, and \overrightarrow{EB} and \overrightarrow{EC} are opposite rays, $\angle AEB$ and $\angle DEB$ are vertical angles. Vertical angles are complimentary meaning their measures add up to 90° , so $m\angle AEB + m\angle DEC = 90^\circ$. Using substitution gives the equation, $2x + 30 = 90$. Subtracting both sides by 30, and then dividing both sides by 2 gives $x = 30$.
- C. Since $\angle AED$ is a straight angle, its measure is 180° . By the Angle Addition Postulate, $m\angle AEB + m\angle BEC + m\angle CED = m\angle AED$. Using substitution gives the equation, $2x + 4x + 30 = 180$. After combining like terms the equation becomes $6x + 30 = 180$. Subtracting both sides by 30, and then dividing both sides by 6 gives $x = 25$.
- D. Since $\angle AED$ is a straight angle, its measure is 90° . By the Angle Addition Postulate, $m\angle AEB + m\angle BEC + m\angle CED = m\angle AED$. Using substitution gives the equation, $2x + 4x + 30 = 90$. After combining like terms the equation becomes $6x + 30 = 90$. Subtracting both sides by 30, and then dividing both sides by 6 gives $x = 10$.
10. In the figure $m\angle FGI = (2x + 9)^\circ$ and $m\angle HGI = (4x - 15)^\circ$. Find $m\angle FGI$ and $m\angle HGI$.

- A. $m\angle FGI = 71^\circ$ and $m\angle HGI = 109^\circ$
- B. $m\angle FGI = 45^\circ$ and $m\angle HGI = 45^\circ$
- C. $m\angle FGI = 33^\circ$ and $m\angle HGI = 33^\circ$
- D. $m\angle FGI = 41^\circ$ and $m\angle HGI = 49^\circ$

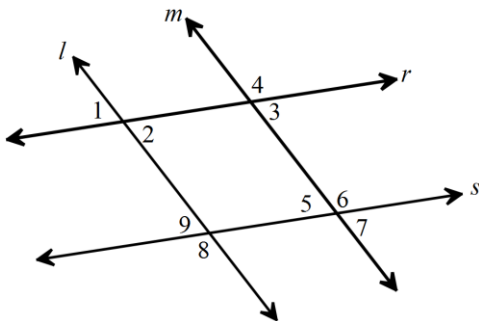


11. \overrightarrow{EB} is the angle bisector of $\angle AEC$. What is the value of x ?

- A. $x = 35$
- B. $x = 51.5$
- C. $x = 70.5$
- D. $x = 142$



12. Based on the figure below, which statements are true if $l \parallel m$ and $r \parallel s$?

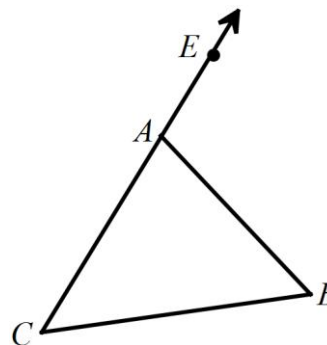


- I. $m\angle 1 = m\angle 5$
- II. $m\angle 2 + m\angle 3 = 180^\circ$
- III. $m\angle 4 = m\angle 8$
- IV. $m\angle 6 + m\angle 9 = 180^\circ$
- V. $m\angle 1 + m\angle 9 = 180^\circ$

- A. All of the above
- B. I, III, and IV
- C. II, III, and IV
- D. III, IV, and V

13. In the figure, $m\angle ABC = m\angle ACB = x$. Find the $m\angle EAB$ in terms of x .

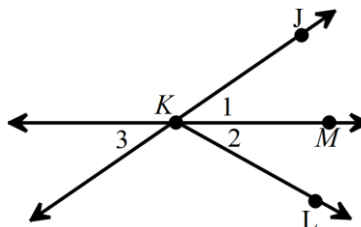
- A. $180 - 2x$
- B. $2x$
- C. x
- D. $x + 90$



For #14-15 use the following:

Given: \overrightarrow{KM} bisects $\angle JKL$

Prove: $m\angle 2 = m\angle 3$



Statements	Reasons
\overrightarrow{KM} bisects $\angle JKL$	Given
$\angle 1 \cong \angle 2$	14.
$m\angle 1 = m\angle 2$	Definition of Congruence
$\angle 1 \cong \angle 3$	15.
$m\angle 1 = m\angle 3$	Definition of Congruence
$m\angle 2 = m\angle 3$	Substitution Property of Equality

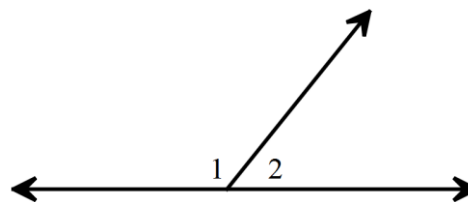
- 14.** Choose one of the following to complete the proof.
- A. Definition of angle bisector- If a ray is an angle bisector, then it divides an angle into two congruent angles.
 - B. Definition of opposite rays- If a point on the line determines two rays are collinear, then the rays are opposite rays.
 - C. Definition of ray- If a line begins at an endpoint and extends infinitely, then it is ray.
 - D. Definition of segment bisector- If any segment, line, or plane intersects a segment at its midpoint then it is the segment bisector.
- 15.** Choose one of the following to complete the proof.
- A. Definition of complementary angles- If the angle measures add up to 90° , then angles are supplementary
 - B. Supplemental Angle Theorem- If two angles are supplementary to a third angle then the two angles are congruent
 - C. Definition of supplementary angles- If the angles are supplementary, then the angle's measures add to 180° .
 - D. Vertical Angle Theorem- If two angles are vertical angles, then they have congruent angle measures.

For #16 use the following:

Given: $\angle 1$ and $\angle 2$ are supplementary, and

$$m\angle 1 = 135^\circ$$

Prove: $m\angle 2 = 45^\circ$



Statements	Reasons
$\angle 1$ and $\angle 2$ are supplementary	Given
[1]	Given
$m\angle 1 + m\angle 2 = 180^\circ$	[2]
$135^\circ + m\angle 2 = 180^\circ$	Substitution Property of Equality
$m\angle 2 = 45^\circ$	[3]

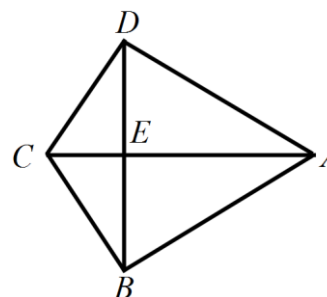
16. Fill in the blanks to complete the two column proof:

- A. [1] $m\angle 2 = 135^\circ$
 [2] Definition of Supplementary Angles
 [3] Subtraction Property of Equality
- B. [1] $m\angle 1 = 135^\circ$
 [2] Definition of Supplementary Angles
 [3] Substitution Property of Equality
- C. [1] $m\angle 1 = 135^\circ$
 [2] Definition of Supplementary Angles
 [3] Subtraction Property of Equality
- D. [1] $m\angle 1 = 135^\circ$
 [2] Definition of Complementary Angles
 [3] Subtraction Property of Equality

17. Find CE given the following information:

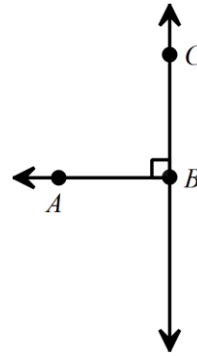
- \overline{AC} is the perpendicular bisector of \overline{DB}
- $EA = 16$
- $DC = 13$
- $AB = 20$

- A. $CE = 15.9$
- B. $CE = 5$
- C. $CE = 17.7$
- D. $CE = 16$



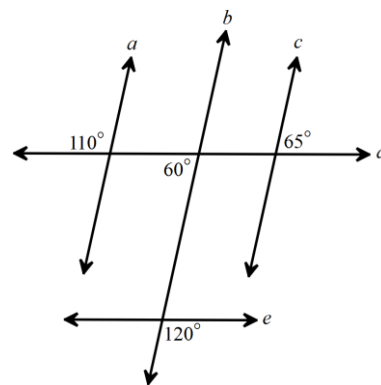
18. Point A is reflected over the line \overleftrightarrow{BC} .
Which of the following is **not** true of line \overleftrightarrow{BC} ?

- A. line \overleftrightarrow{BC} is perpendicular to line $\overleftrightarrow{AA'}$
- B. line \overleftrightarrow{BC} is perpendicular to line \overleftrightarrow{AB}
- C. line \overleftrightarrow{BC} bisects line segment \overline{AB}
- D. line \overleftrightarrow{BC} bisects line segment $\overline{AA'}$



19. Which statement is true based on the figure?

- A. $a \parallel b$
- B. $b \parallel c$
- C. $a \parallel c$
- D. $d \parallel e$

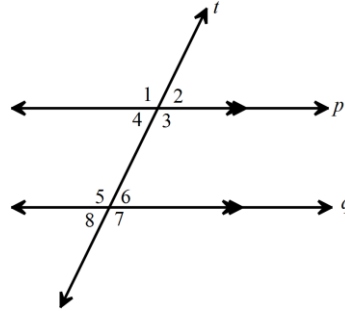


20. Draw two lines and a transversal such that $\angle 1$ and $\angle 2$ are alternate interior angles, $\angle 2$ and $\angle 3$ are corresponding angles, and $\angle 3$ and $\angle 4$ are alternate exterior angles. What type of angle pair is $\angle 1$ and $\angle 4$?
- A. $\angle 1$ and $\angle 4$ are supplementary angles
 - B. $\angle 1$ and $\angle 4$ are vertical angles
 - C. $\angle 1$ and $\angle 4$ are corresponding angles
 - D. $\angle 1$ and $\angle 4$ are alternate exterior angles

For #21-22 use the following:

Given: $p \parallel q$

Prove: $m\angle 3 + m\angle 6 = 180$



Statements	Reasons
$p \parallel q$	Given
21.	If two parallel lines are cut by a transversal, then each pair of alternate interior angles is congruent.
$m\angle 3 = m\angle 5$	Definition of Congruence
$\angle 5$ and $\angle 6$ are supplementary	If two angles form a linear pair, then they are supplementary.
$m\angle 5 + m\angle 6 = 180$	22.
$m\angle 3 + m\angle 6 = 180$	Substitution Property of Equality

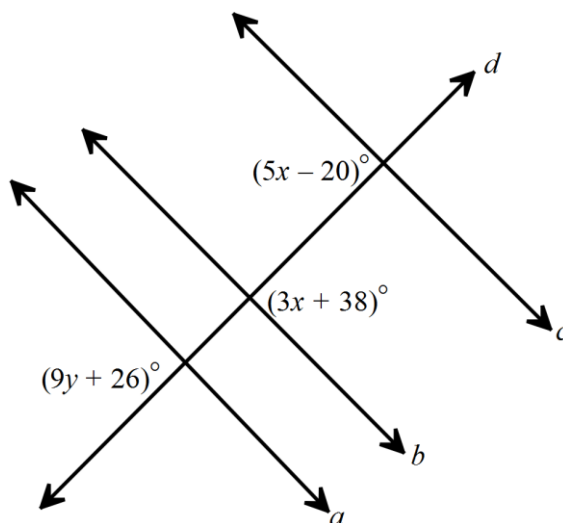
21. Choose one of the following to complete the proof.

- A. $\angle 4 \cong \angle 5$
- B. $\angle 2 \cong \angle 8$
- C. $\angle 3 \cong \angle 6$
- D. $\angle 3 \cong \angle 5$

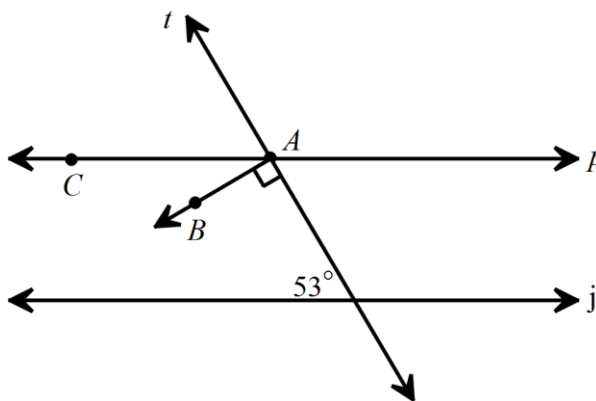
22. Choose one of the following to complete the proof.

- A. Vertical Angle Theorem- If two angles are vertical angles, then they have congruent angle measures
- B. Supplemental Angle Theorem- If two angles are supplementary to a third angle then they are congruent
- C. Definition of supplementary angles- If two angles are supplementary, then their angle measures add to 180° .
- D. Definition of complementary angles- If two angles are a complementary, then their angle measures add to 90°

23. Solve for x and y so that $a \parallel b \parallel c$.



- A. $x = 9, y = 10.1$
 B. $x = 9, y = 9.9$
 C. $x = 29, y = 3.2$
 D. $x = 29, y = 11.0$
24. In the diagram below, line p is parallel to line j and line t is perpendicular to \overrightarrow{AB} . What is the measure of $\angle BAC$?



- A. $m\angle BAC = 37^\circ$
 B. $m\angle BAC = 53^\circ$
 C. $m\angle BAC = 45^\circ$
 D. $m\angle BAC = 127^\circ$
25. What are the coordinates of the point P that lies along the directed segment from $C(-3, -2)$ to $D(6, 1)$ and partitions the segment in the ratio of 2 to 1?
- A. $(0, 3)$
 B. $(3, 0)$
 C. $(1.5, 0.5)$
 D. $(4.5, 1.5)$

26. An 80 mile trip is represented on a gridded map by a directed line segment from point $M(3, 2)$ to point $N(9, 13)$. What point represents 60 miles into the trip?

A. $(8, 14.6)$

C. $(9, 11.25)$

B. $(3.75, 9.75)$

D. $(7.5, 10.25)$

27. Given the two lines below, which statement is true?

Line 1: $x - 3y = -15$ and *Line 2:* $y = 3(x + 2) - 1$

A. The lines are parallel.

B. They are the same line.

C. The lines are perpendicular.

D. The lines intersect but are not perpendicular.

28. Which equation of the line passes through $(5, -8)$ and is parallel to the graph of the line $y = \frac{2}{3}x - 4$?

A. $y = \frac{2}{3}x - \frac{34}{3}$

C. $y = \frac{2}{3}x - 8$

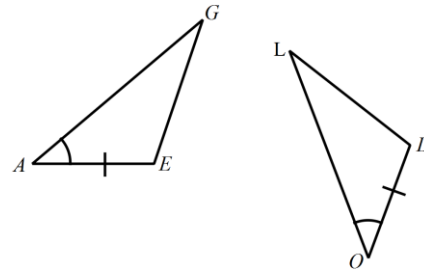
B. $y = -\frac{3}{2}x - \frac{1}{2}$

D. $y = -\frac{3}{2}x - 8$

29. Which equation of the line passes through $(4, 7)$ and is perpendicular to the graph of the line that passes through the points $(1, 3)$ and $(-2, 9)$?
- A. $y = 2x - 1$
- B. $y = \frac{1}{2}x + 5$
- C. $y = \frac{1}{2}x - 5$
- D. $y = -2x + 15$
30. Which of the following is true?
- A. All triangles are congruent.
- B. All congruent figures have three sides.
- C. If two figures are congruent, there must be some sequence of rigid motions that maps one to the other.
- D. If two triangles are congruent, then they must be right triangles.
31. If $\triangle CED \cong \triangle QRP$, which of the following is true?
- A. $\angle C \cong \angle Q, \angle E \cong \angle R, \angle D \cong \angle P$
- B. $\angle C \cong \angle Q, \angle E \cong \angle P, \angle D \cong \angle R$
- C. $\angle C \cong \angle P, \angle E \cong \angle R, \angle D \cong \angle Q$
- D. $\angle C \cong \angle R, \angle E \cong \angle Q, \angle D \cong \angle P$

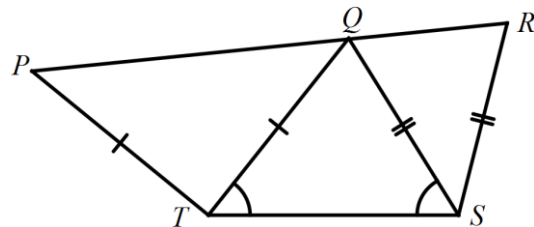
32. In the figure $\angle GAE \cong \angle LOD$ and $\overline{AE} \cong \overline{DO}$. What information is needed to prove that $\triangle AGE \cong \triangle OLD$ by SAS?

- A. $\overline{GE} \cong \overline{LD}$
- B. $\overline{AG} \cong \overline{OL}$
- C. $\angle AGE \cong \angle OLD$
- D. $\angle AEG \cong \angle ODL$



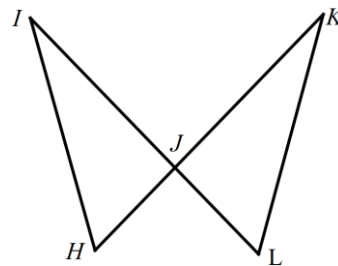
33. Which conclusion can be drawn from the given facts in the diagram?

- A. \overline{TQ} bisects $\angle PTS$
- B. $\angle TQS \cong \angle RQS$
- C. $\overline{PT} \cong \overline{RS}$
- D. $TS = PQ$



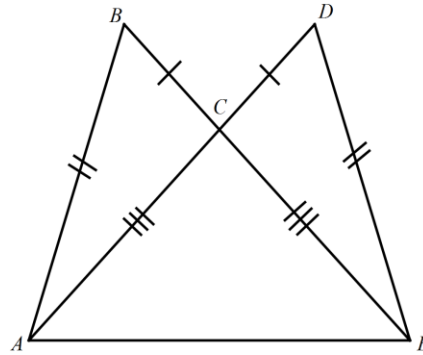
34. In the figure $\angle H \cong \angle L$ and $HJ = JL$. Which of the following statements is about congruence is true?

- A. $\triangle HIJ \cong \triangle LKJ$ by ASA
- B. $\triangle HIJ \cong \triangle LKJ$ by SSS
- C. $\triangle HIJ \cong \triangle LKJ$ by SAS
- D. $\triangle HIJ \cong \triangle LKJ$ by SAS



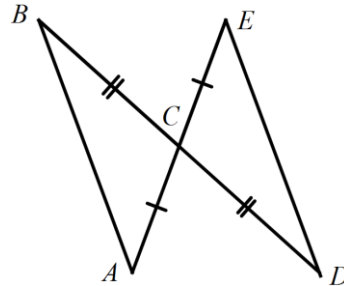
35. Refer To the figure to complete the congruence statement, $\triangle ABC \cong$ _____.

- A. $\triangle ACE$
- B. $\triangle EDC$
- C. $\triangle EAD$
- D. $\triangle EDA$



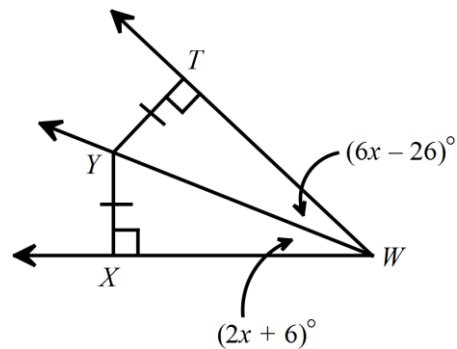
36. Which theorem can be used to conclude that $\triangle CAB \cong \triangle CED$?

- A. SAA
- B. SAS
- C. SSS
- D. AAA



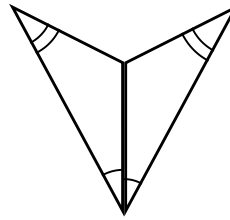
37. In the figure, identify which congruence statement is true. Then find $m\angle TYW$.

- A. $\triangle WTY \cong \triangle WXY$ by HL
 $m\angle TYW = 22^\circ$
- B. $\triangle WTY \cong \triangle XYW$ by HL
 $m\angle TYW = 78^\circ$
- C. $\triangle YWT \cong \triangle WXY$ by HL
 $m\angle TYW = 22^\circ$
- D. $\triangle WTY \cong \triangle WXY$ by HL
 $m\angle TYW = 68^\circ$

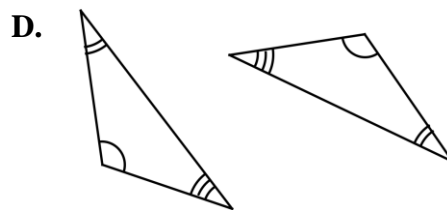
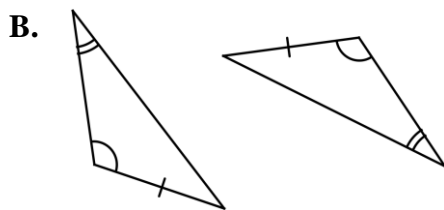
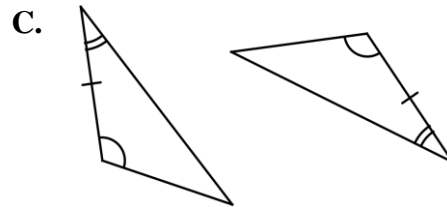
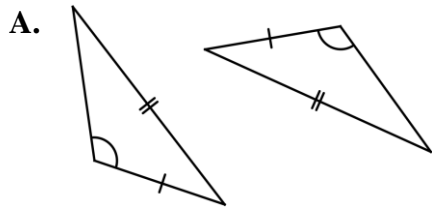


38. Determine which postulate or theorem can be used to prove the pair of triangles congruent.

- A. AAS
- B. SAS
- C. ASA
- D. SSS

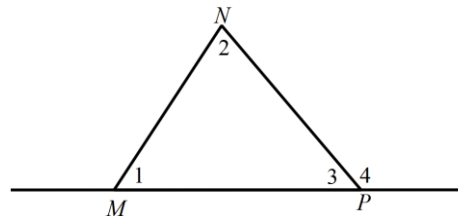


39. Which of the following sets of triangles can be proved congruent using the AAS Theorem?



40. Given $\triangle MNP$, Anna is proving $m\angle 1 + m\angle 2 = m\angle 4$. Which statement should be part of her proof?

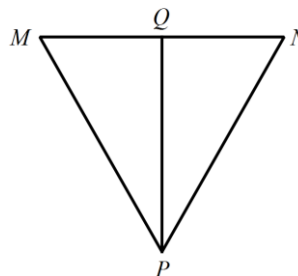
- A. $m\angle 1 = m\angle 2$
- B. $m\angle 1 = m\angle 3$
- C. $m\angle 1 + m\angle 3 = 180^\circ$
- D. $m\angle 3 + m\angle 4 = 180^\circ$



For #41-42 use the following:

Given: Q is the midpoint of \overline{MN} ; $\angle MQP \cong \angle NQP$

Prove: $\triangle MQP \cong \triangle NQP$



Statements	Reasons
Q is the midpoint of \overline{MN} ; $\angle MQP \cong \angle NQP$	Given
41.	Definition of Midpoint
$\angle MQP \cong \angle NQP$	Given
$\overline{QP} \cong \overline{QP}$	Reflexive property of congruence
$\triangle MQP \cong \triangle NQP$	42.

41. Choose one of the following to complete the proof.

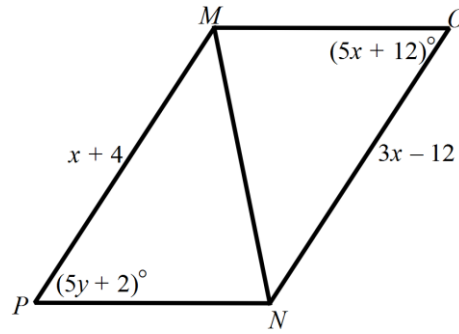
- A. $\overline{MN} \cong \overline{QP}$
- B. $\overline{MQ} \cong \overline{NQ}$
- C. $\overline{MP} \cong \overline{NP}$
- D. $\overline{QP} \cong \overline{QP}$

42. Choose one of the following to complete the proof.

- A. Reflexive property of equality
- B. SSA Congruence
- C. SAS Congruence
- D. AAS Congruence

43. In the figure, $\triangle MON \cong \triangle NPM$. What is the value of y ?

- A. $y = 8$
- B. $y = 10$
- C. $y = 42$
- D. $y = 52$

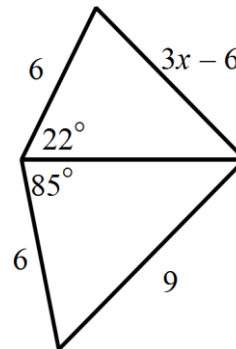


44. If a triangle has two sides with lengths of 8 cm and 14 cm. Which length below could **not** represent the length of the third side?

- A. 7 cm
- B. 13 cm
- C. 15 cm
- D. 22 cm

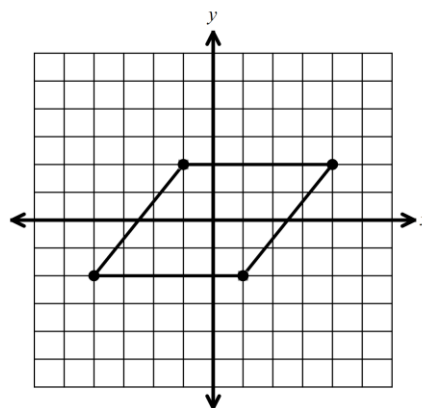
45. Find the range of values containing x .

- A. $2 < x < 5$
- B. $x < 5$
- C. $0 < x < 9$
- D. $x > 0$



46. Reflecting over which line will map the rhombus onto itself?

- A. $y = -2x$
- B. $y = 0$
- C. $y = \frac{1}{4}x$
- D. $y = x$



47. What is the measure of HJ in Parallelogram $FGHJ$, given the following:

$$FG = x + 7$$

$$GH = 5x + 3$$

$$m\angle F = 46^\circ$$

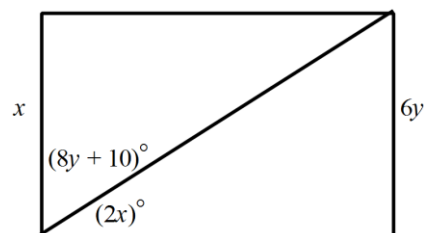
$$m\angle H = (3x + 10)^\circ$$

- A. $HJ = 63$
- B. $HJ = 19$
- C. $HJ = 12$
- D. $HJ = 8$



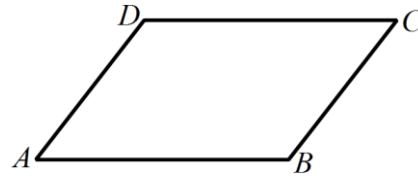
48. What is the value of x in the rectangle?

- A. $x = 42$
- B. $x = 24$
- C. $x = 8$
- D. $x = 4$



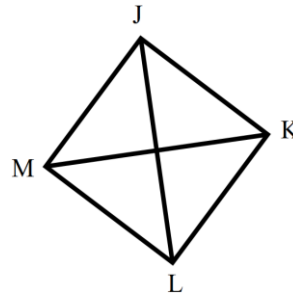
49. Which of the following is **not** always true of Parallelogram $ABCD$?

- A. $\overline{AB} \cong \overline{BC}, \overline{DC} \cong \overline{BC}$
- B. $\overline{AB} \cong \overline{DC}, \overline{BC} \cong \overline{AD}$
- C. $m\angle A + m\angle B = 180^\circ$
- D. $AB + BC = AD + DC$

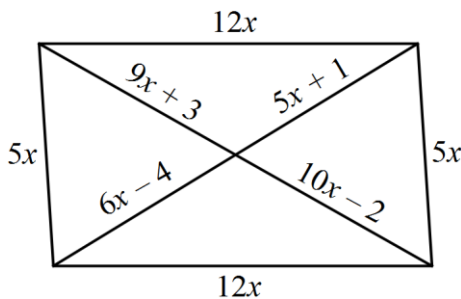


50. $JKLM$ is a rhombus. If $m\angle JML = 70$ and $m\angle JKM = (5x + 16)^\circ$, find the value of x .

- A. $x = 18.8$
- B. $x = 10.8$
- C. $x = 7.8$
- D. $x = 3.8$

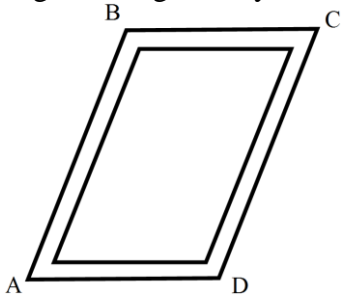


51. Based on the figure below, which statements are true?



- I. The figure is a rectangle
 - II. The figure is a parallelogram
 - III. $6x - 4 = 9x + 3$
 - IV. $9x + 3 = 10x - 2$
 - V. $x = 8$
 - VI. The longest side has a length of 60.
- A. I, III, and V
 - B. I, IV, and VI
 - C. II, IV, and VI
 - D. II, III, and V

52. A wooden frame has screws at A , B , C , and D so that the sides of it can be pressed to change the angles occurring at each vertex. $\overline{AB} \cong \overline{CD}$ and $\overline{AB} \parallel \overline{CD}$, even when the angles change. Why is the frame always a parallelogram?

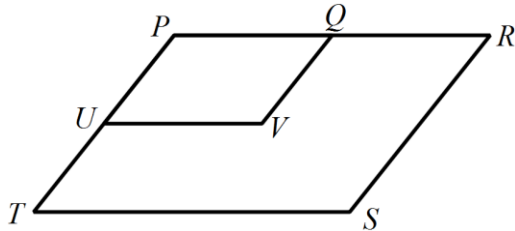


- A. The angles always stay the same, so $ABCD$ is a parallelogram.
- B. All sides are congruent, so $ABCD$ is a parallelogram.
- C. One pair of opposite sides is congruent and parallel, so $ABCD$ is a parallelogram.
- D. One pair of opposite sides is congruent, so $ABCD$ is a parallelogram.
53. Which statement is true?
- A. All quadrilaterals are rectangles.
- B. All rectangles are parallelograms.
- C. All parallelograms are rectangles.
- D. All quadrilaterals are squares.

54. A student is given the following information and then asked to write a paragraph proof. Determine which statement would correctly complete the student's proof.

Given: Parallelogram $PRST$ and Parallelogram $PQVU$

Prove: $\angle V \cong \angle S$



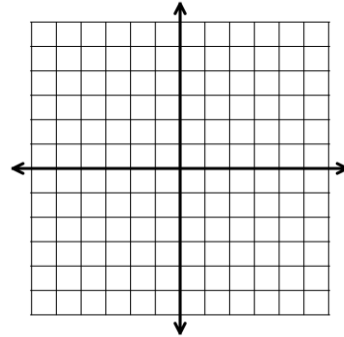
Proof:

We are given Parallelogram $PRST$ and Parallelogram $PQVU$. Since opposite angles of a parallelogram are congruent, $\angle P \cong \angle V$ and $\angle P \cong \angle S$. _____.

- A. Therefore, $\angle V \cong \angle S$ by the Transitive Property of Congruence.
 - B. Therefore, $\angle V \cong \angle S$ by the Transformative Property of Congruence.
 - C. Therefore, $\angle V \cong \angle S$ by the Reflective Property of Congruence.
 - D. Therefore, $\angle V \cong \angle S$ by the Reflexive Property of Congruence.
55. Archeologists use coordinate grids on their dig sites to help document where objects are found. While excavating the site of a large ancient building, archeologists find what they believe to be a wooden support beam that extended across the entire building. One end of the beam was located at the coordinate $(-13, 12)$ and markings on the beam indicate that the midpoint of the beam was located at $(2, 4)$. Assuming the beam is still intact, where should the archeologists begin digging to find the other end of the beam?
- A. $(-17, 4)$
 - B. $(-7.5, 4)$
 - C. $(-5.5, 8)$
 - D. $(17, -4)$

56. Use slope or the distance formula to determine the most precise name for the figure:
 $A(-1, -4), B(1, -1), C(4, 1), D(2, -2)$.

- A. Kite
- B. Rhombus
- C. Trapezoid
- D. Square

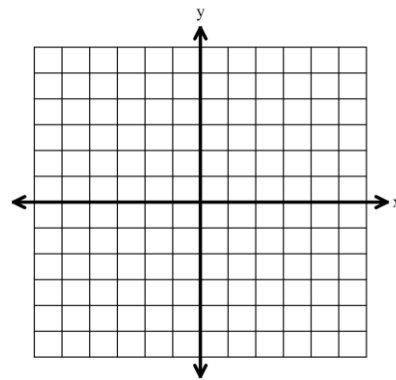


57. Find the distance between the line $y = 2x - 3$ and the point $(3, -7)$.

- A. 4.5 units
- B. 5 units
- C. 10 units
- D. 12.2 units

58. Given points $B(-3, 3), C(3, 4)$, and $D(4, -2)$. Which of the following points must be point A in order for the quadrilateral $ABCD$ to be a parallelogram?

- A. $A(-2, -1)$
- B. $A(-3, -2)$
- C. $A(-2, -3)$
- D. $A(-1, -2)$

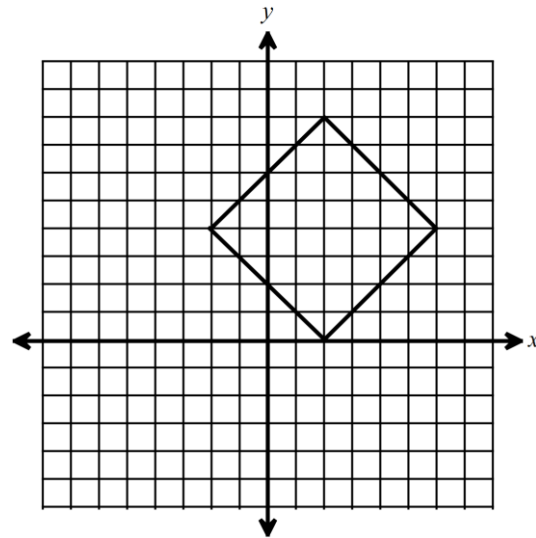


59. Find the area of the polygon with vertices $A(-8, 1), B(-5, 6), C(4, 2)$, and $D(-2, -2)$.

- A. 44.5 units
- B. 46 units
- C. 48 units
- D. 49.5 units

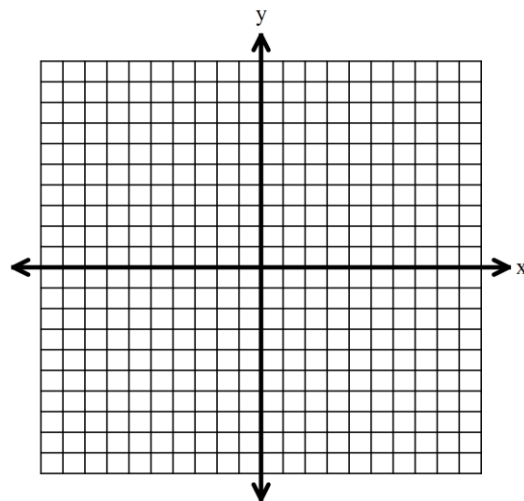
60. A researcher finds that there are 242 bacteria evenly distributed on a 1-square inch sample of a table surface. How many bacteria would the scientist expect to find on the table top mapped below where each unit of the graph is equivalent to 1 foot?

- A. 7,744 bacteria
- B. 92,928 bacteria
- C. 557,568 bacteria
- D. 1,115,136 bacteria



61. Given the lines $y = -\frac{1}{3}x + 2$ and $y = x - 4$, find the equation for a third line that would complete a right triangle in the coordinate plane.

- A. $y = x + 4$
- B. $y = -x - 5$
- C. $x = -3$
- D. $y = -3x + 5$



**Geometry Semester 1 Instructional Materials 2016-2017
Answers**

1.	C	11.	A	21.	D	31.	A	41.	B	51.	C
2.	B	12.	B	22.	C	32.	B	42.	C	52.	C
3.	D	13.	B	23.	D	33.	C	43.	B	53.	B
4.	C	14.	A	24.	A	34.	A	44.	D	54.	A
5.	D	15.	D	25.	B	35.	B	45.	A	55.	D
6.	A	16.	C	26.	D	36.	B	46.	A	56.	B
7.	D	17.	B	27.	D	37.	D	47.	B	57.	A
8.	A	18.	C	28.	A	38.	A	48.	B	58.	C
9.	C	19.	D	29.	B	39.	B	49.	A	59.	D
10.	D	20.	C	30.	C	40.	D	50.	D	60.	D
										61.	B