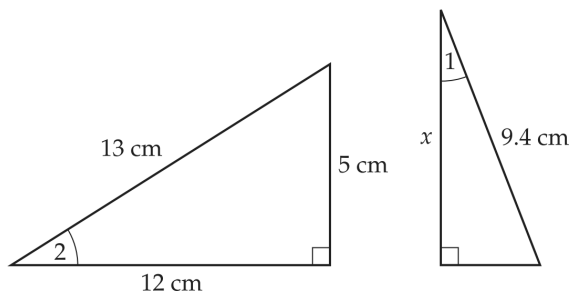


Math 2: Test Review

Name: _____

Date: _____

1. The triangles shown below are similar and $\angle 1 \cong \angle 2$.

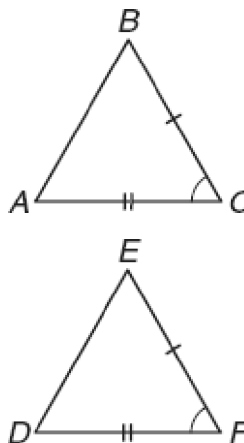


Note: The figures are not drawn to scale.

What is the length of x ? Round the answer to the nearest tenth of a centimeter.

- A. 3.6 centimeters B. 8.7 centimeters
C. 16.6 centimeters D. 24.4 centimeters

2. Based on the diagram below, which of these arguments is valid?

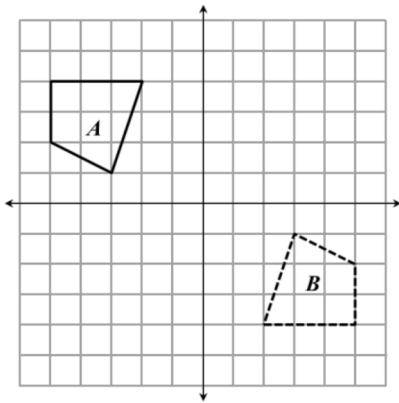


- A. The triangles are congruent by side-side-side (SSS).
B. The triangles are congruent by side-angle-side (SAS).
C. The triangles are congruent by angle-side-angle (ASA).
D. The triangles are congruent by angle-angle-side (AAS).
3. What is the vertex of the quadratic function $y = -(x - 3)^2 + 4$?
- A. (5, 0) B. (0, -5)
C. (3, 4) D. (-3, 4)
4. Which binomial is a factor of $3x^2 + 2x - 5$?
- A. $3x - 1$ B. $x - 1$ C. $3x - 5$ D. $x - 5$

5. Which ordered pair is the vertex of $f(x) = x^2 + 6x + 5$?

- A. $(-3, -4)$ B. $(-2, -3)$
 C. $(-1, 0)$ D. $(0, -5)$

6. Which transformation maps the solid figure *A* onto the dashed figure *B*?

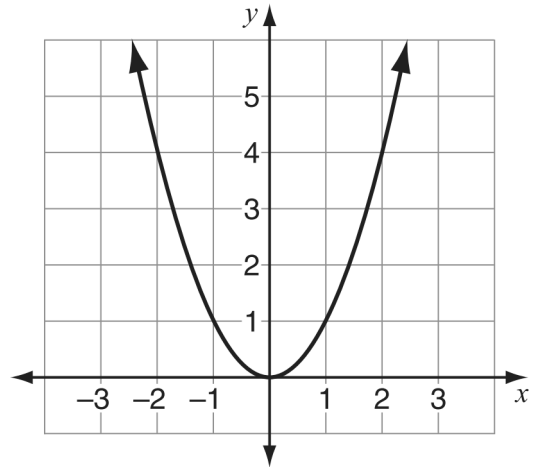


- A. Rotation 180° about the origin
 B. Translation to the right and down
 C. Reflection across the x -axis
 D. Reflection across the y -axis

7. What are the x -intercepts for the function $f(x) = x^2 + 2x - 15$?

- A. $(0, -5), (0, 3)$ B. $(0, 5), (0, -3)$
 C. $(5, 0), (-3, 0)$ D. $(-5, 0), (3, 0)$

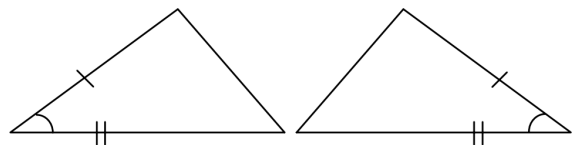
8. Look at this graph of a function.



What is the domain of the function?

- A. all real numbers
 B. all real numbers greater than or equal to 0
 C. all real numbers between 0 and 4
 D. all real numbers between -2 and 2

9. Which theorem can be used to prove that the triangles in the figure below are congruent?



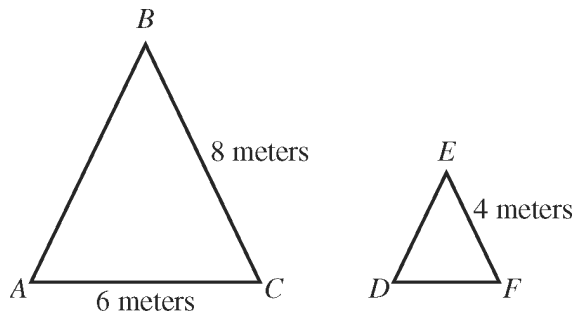
- A. side-by-side (SSS)
 B. side-angle-side (SAS)
 C. angle-side-angle (ASA)
 D. angle-angle-side (AAS)

10. What are the solutions to the equation

$$3x^2 + 3 = 7x$$

- A. $x = \frac{7 + \sqrt{85}}{6}$ or $x = \frac{7 - \sqrt{85}}{6}$
B. $x = \frac{-7 + \sqrt{85}}{6}$ or $x = \frac{-7 - \sqrt{85}}{6}$
C. $x = \frac{7 + \sqrt{13}}{6}$ or $x = \frac{7 - \sqrt{13}}{6}$
D. $x = \frac{-7 + \sqrt{13}}{6}$ or $x = \frac{-7 - \sqrt{13}}{6}$

11. $\triangle ABC$ is similar to $\triangle DEF$. What is the length of \overline{DF} ?



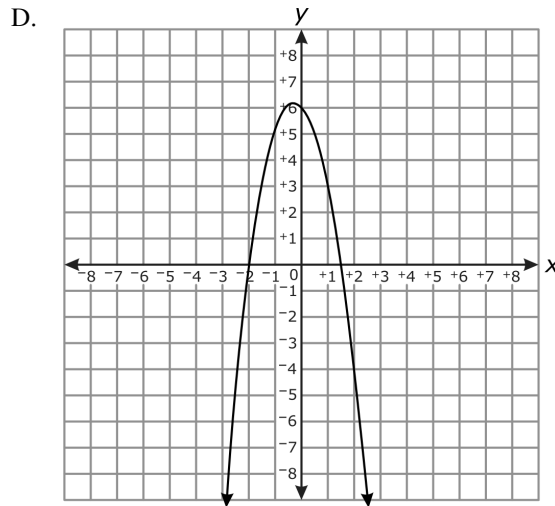
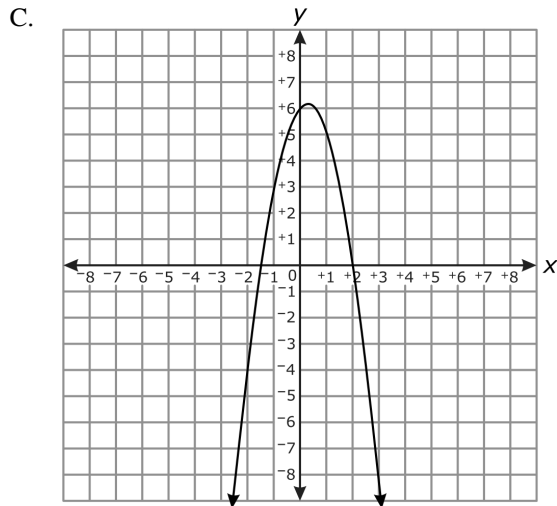
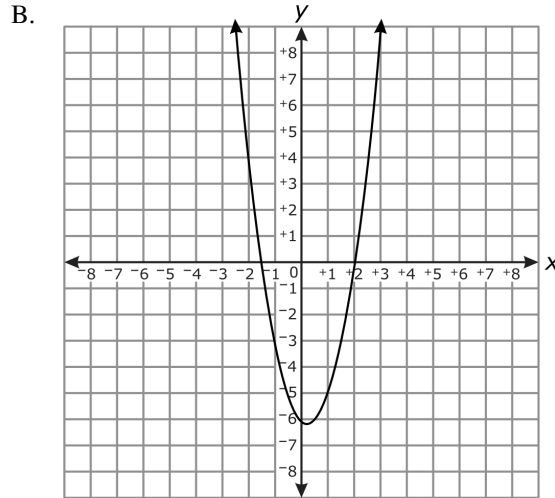
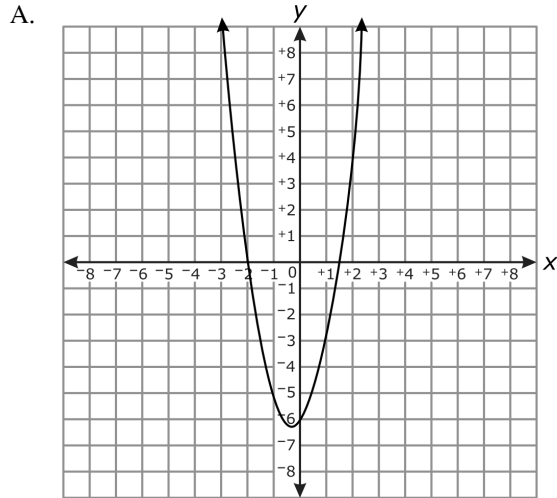
- A. 2 meters
B. 3 meters
C. 5 meters
D. 10 meters

12. Which of the following is one of the factors of the expression below?

$$4x^2 - 25$$

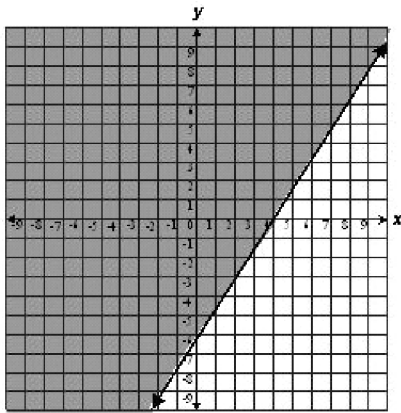
- A. $(4x - 5)$
B. $(2x + 1)$
C. $(4x - 1)$
D. $(2x - 5)$

13. Which graph displays the function $f(x) = (2x + 3)(x - 2)$?

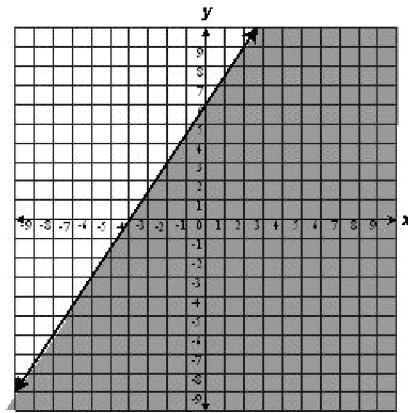


14. Which of these best represents the graph of the solution set to the inequality $3x - 2y \geq 12$?

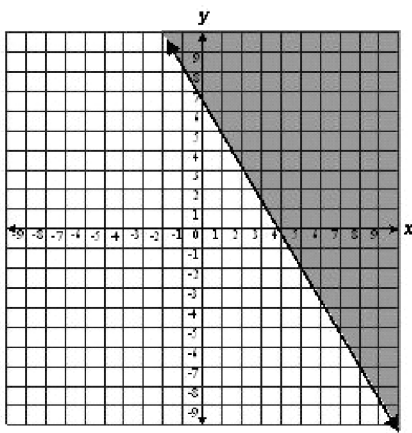
A.



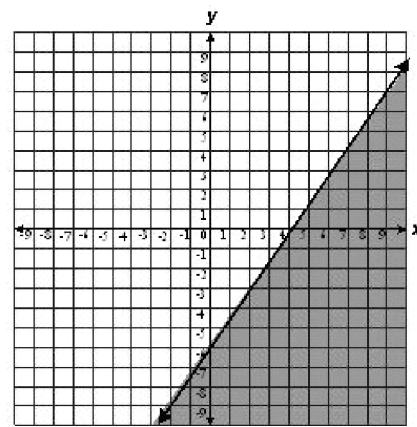
B.



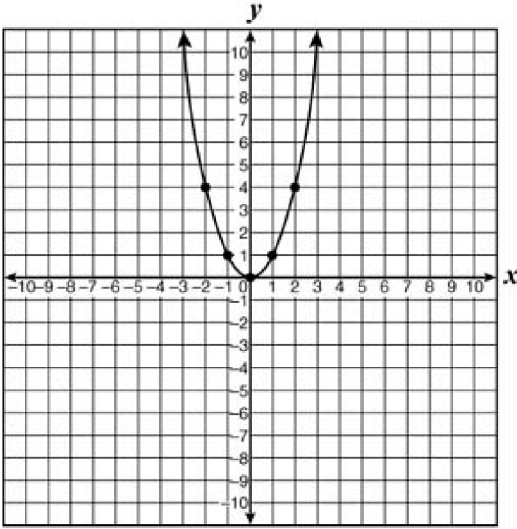
C.



D.



15. The equation of the function of x graphed below is $y = x^2$.

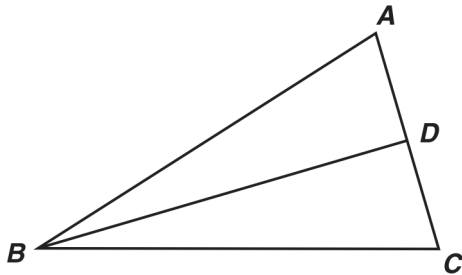


What is the range of the function?

- A. {real numbers} B. $\{y : y \geq 0\}$
 C. $\{y : 0 \leq y \leq 3\}$ D. $\{y : -3 \leq y \leq 3\}$
16. Use the proof to answer the question below.

Given: $\overline{AB} \cong \overline{BC}$; D is the midpoint of \overline{AC}

Prove: $\triangle ABD \cong \triangle CBD$



<u>Statement</u>	<u>Reason</u>
1. $\overline{AB} \cong \overline{BC}$; D is the midpoint of \overline{AC}	1. Given
2. $\overline{AD} \cong \overline{CD}$	2. Definition of Midpoint
3. $\overline{BD} \cong \overline{BD}$	3. Reflexive Property
4. $\triangle ABD \cong \triangle CBD$	4. ?

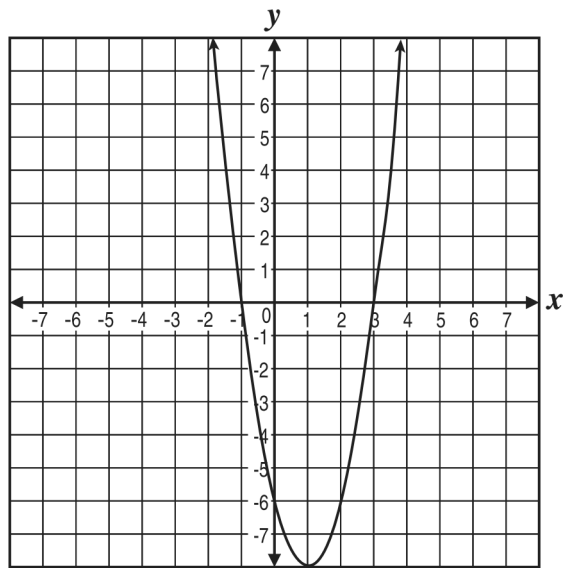
What reason can be used to prove that the triangles are congruent?

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

17. When factored completely, which is a factor of $12ax^2 - 3a$?

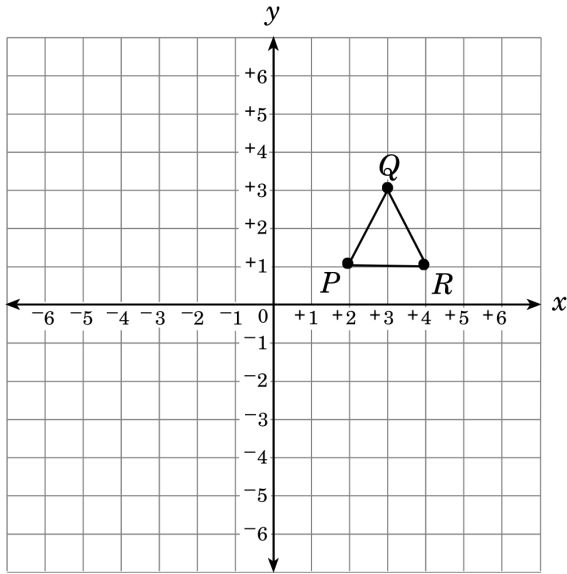
- A. $12a$ B. $(4x^2 + 1)$
 C. $3a$ D. $(4x - 1)$

18. What are the real roots of the function in the graph?



- A. 3 B. -6
 C. -1 and 3 D. -6, -1, and 3

19. Triangle PQR will be rotated 90° counterclockwise about the origin.

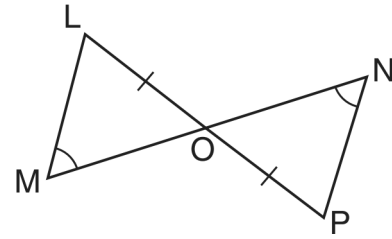


What will be the coordinates of R' ?

- A. (4, 1) B. (0, 4)
 C. (-1, -4) D. (-1, 4)

20. Given: $\angle M \cong \angle N$, $\overline{LO} \cong \overline{PO}$

Prove: $\triangle MOL \cong \triangle NOP$

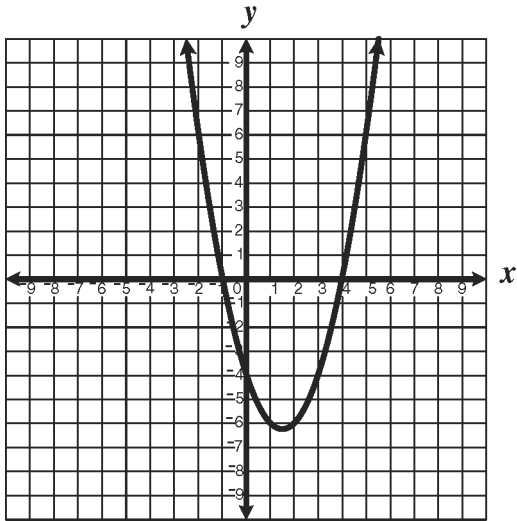


Statements	Reasons
1) $\angle M \cong \angle N$	1) Given
2) $\overline{LO} \cong \overline{PO}$	2) Given
3) $\angle MOL \cong \angle NOP$	3)
4) $\triangle MOL \cong \triangle NOP$	4) AAS

Which of these reasons would be appropriate for statement 3?

- A. reflexive property
 B. definition of midpoint
 C. Vertical angles are congruent.
 D. Corresponding parts of congruent triangles are congruent.

21. The graph of the equation $y = x^2 - 3x - 4$ is shown below.



For what value or values of x is $y = 0$?

- A. $x = -1$ only B. $x = -4$ only
 C. $x = -1$ and $x = 4$ D. $x = 1$ and $x = -4$
22. Katie performed the steps shown below to solve a quadratic equation using the method of completing the square.

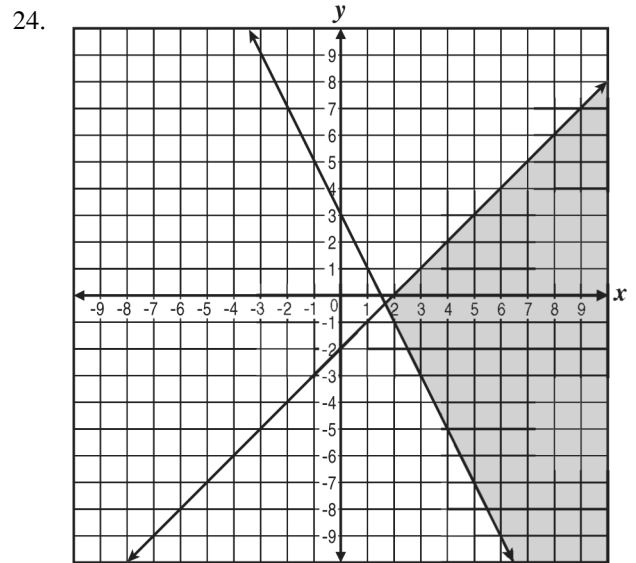
Step 1: $x^2 + 4x - 6 = 0$

Step 2: $x^2 + 4x = 6$

Which represents the next correct step Katie should perform?

- A. $x^2 + 4x + 2 = 6 - 2$ B. $x^2 + 4x + 4 = 6 - 4$
 C. $x^2 + 4x + 2 = 6 + 2$ D. $x^2 + 4x + 4 = 6 + 4$

23. What is the range (all possible y -values) of the function $y = x^2 - 9$ if x is any real number?
- A. all real numbers except 3
 B. all real numbers except -3
 C. all real numbers greater than or equal to 9
 D. all real numbers greater than or equal to -9



Which system of linear inequalities is represented by this graph?

- A. $\begin{cases} y \geq \frac{1}{2} + 3 \\ y \geq x - 2 \end{cases}$ B. $\begin{cases} y \geq 2x + 3 \\ y \leq x - 2 \end{cases}$
 C. $\begin{cases} 2x - y \geq 3 \\ x + y \leq 2 \end{cases}$ D. $\begin{cases} 2x + y \geq 3 \\ x - y \geq 2 \end{cases}$
25. If $3x^2 = 48$, what is the value of x ?

- A. ± 4 B. ± 8
 C. ± 16 D. 0 or 4

26. Which of these is a factor of the polynomial below?

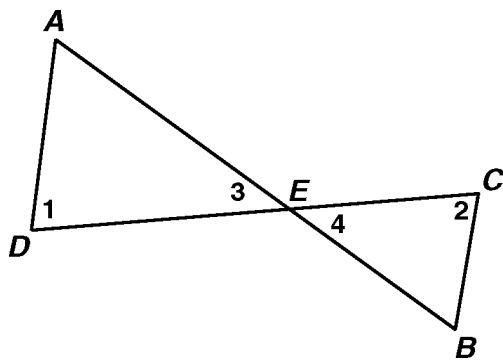
$$9m^2 - 12m + 4$$

- A. $3m - 2$ B. $3m + 2$
 C. $3m - 1$ D. $3m - 4$

27. Which method listed below would *not* be used to prove that two triangles are congruent?

- A. Prove all three sets of corresponding sides congruent.
 B. Prove all three sets of corresponding angles congruent.
 C. Prove that two sides and an included angle of one triangle are congruent to two sides and an included angle of the other triangle.
 D. Prove that two angles and an included side of one triangle are congruent to two angles and an included side of the other triangle.

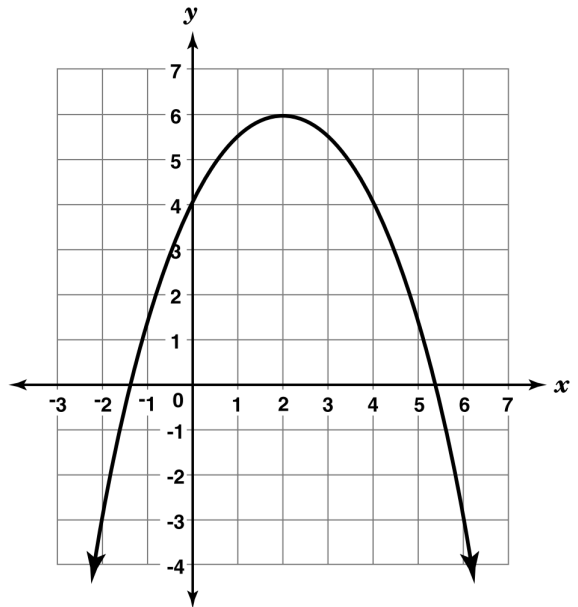
28. Given: \overline{AB} and \overline{CD} intersect at point E ;
 $\angle 1 \cong \angle 2$



Which theorem or postulate can be used to prove $\triangle AED \sim \triangle BEC$?

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

29. Look at the graph below.



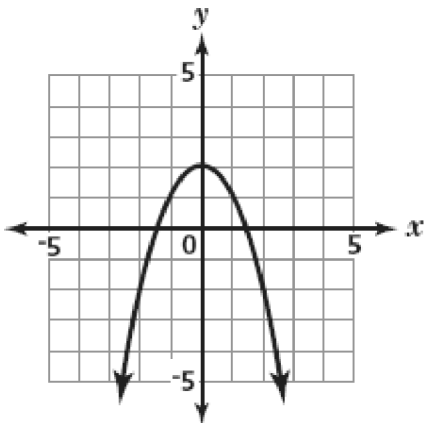
Which of these terms describes the y -coordinate of the point $(2, 6)$?

- A. zero B. intercept
 C. minimum D. maximum

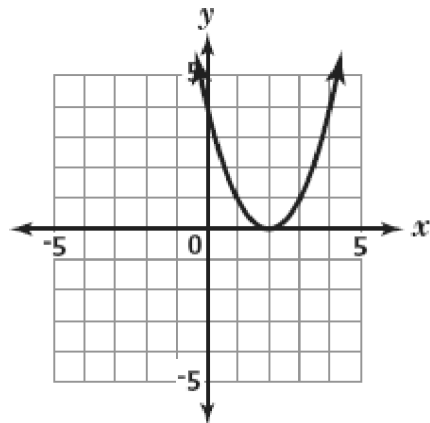
30. What is the graph of the equation?

$$y = x^2 - 4x + 4$$

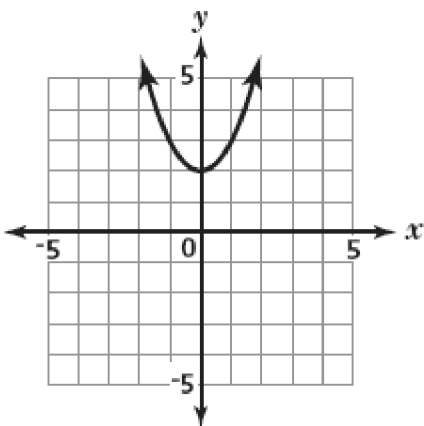
A.



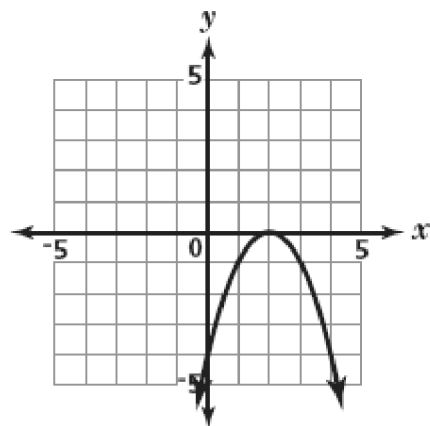
B.



C.



D.



31. What quantity should be added to both sides of this equation to complete the square?

$$x^2 - 8x = 5$$

- A. 4 B. -4 C. 16 D. -16

32. How many times does the graph of $y = 2x^2 - 2x + 3$ intersect the x -axis?

- A. none B. one C. two D. three

33. Which is a factor of $x^2 - 11x + 24$?

- A. $x + 3$ B. $x - 3$ C. $x + 4$ D. $x - 4$

34. $\triangle KLM \cong \triangle PQR$, $m\angle K = 80^\circ$ and $m\angle R = 30^\circ$. What is the measure of $\angle L$?

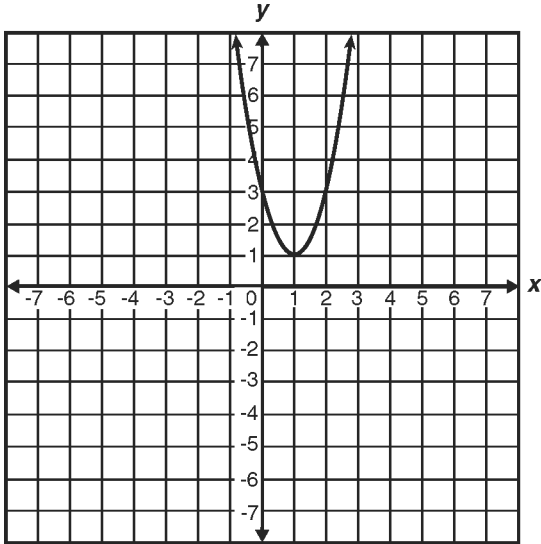
- A. 30° B. 50° C. 70° D. 80°

35. Which function has a maximum value of 10?

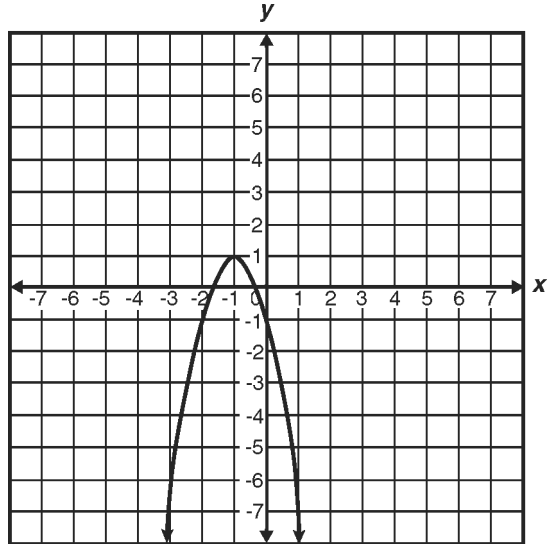
- A. $y = 10 + x^2$ B. $y = 10 - x^2$
 C. $y = x^2 + 10x$ D. $y = x^2 - 10x$

36. Which is the graph of $y = -2(x - 1)^2 + 1$?

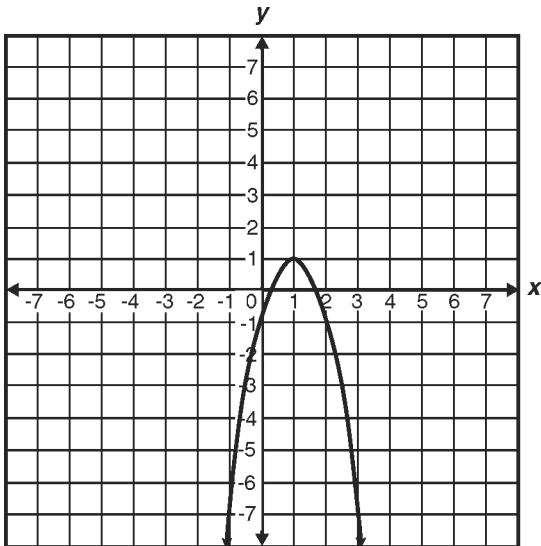
A.



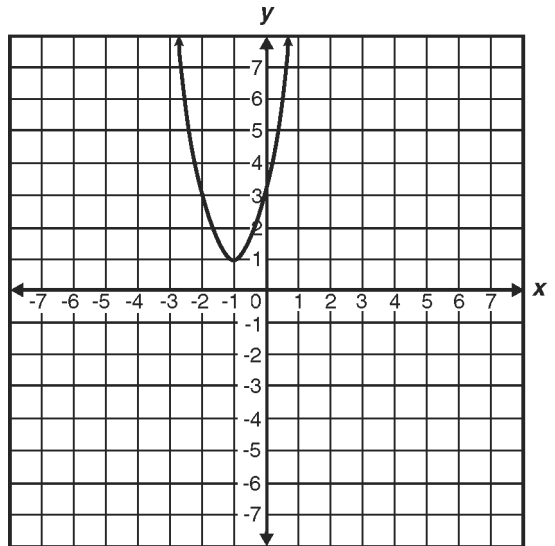
B.



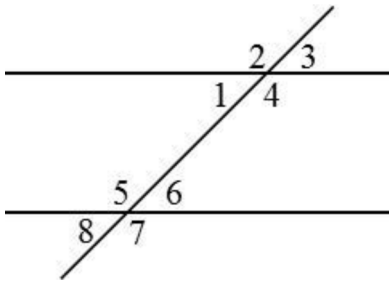
C.



D.

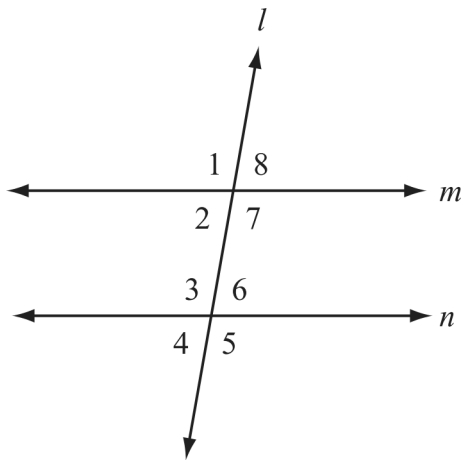


37. A transversal crosses two parallel lines. Which statement should be used to prove that the measures of angles 1 and 5 sum to 180° ?



- A. Angles 1 and 8 are congruent as corresponding angles; angles 5 and 8 form a linear pair.
 B. Angles 1 and 2 form a linear pair; angles 3 and 4 form a linear pair.
 C. Angles 5 and 7 are congruent as vertical angles; angles 6 and 8 are congruent as vertical angles.
 D. Angles 1 and 3 are congruent as vertical angles; angles 7 and 8 form a linear pair.

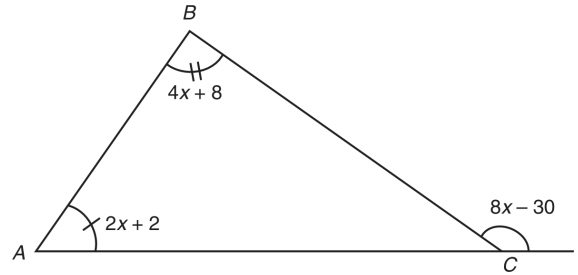
38. Line m and line n are parallel lines intersected by transversal line l , as shown below.



Which of the following pairs of angles *must* have the same measure?

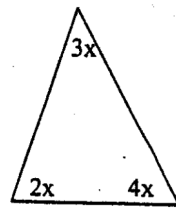
- A. $\angle 1$ and $\angle 8$ B. $\angle 2$ and $\angle 6$
 C. $\angle 6$ and $\angle 7$ D. $\angle 8$ and $\angle 5$

39. In the diagram shown, what is the measure of $\angle BAC$?



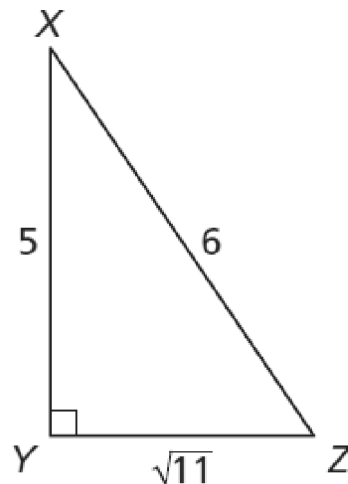
- A. 30 B. 42 C. 50 D. 130

40. Find the measure in degrees, of the smallest angle in this triangle?



- A. 20 B. 40 C. 60 D. 80

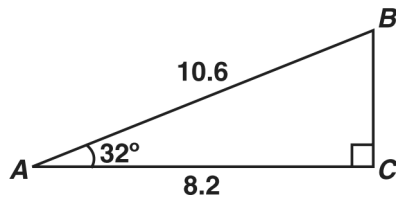
41. Study the triangle below.



What is the cosine of $\angle X$?

- A. $\frac{5}{6}$ B. $\frac{\sqrt{11}}{6}$ C. $\frac{\sqrt{11}}{5}$ D. $\frac{6}{5}$

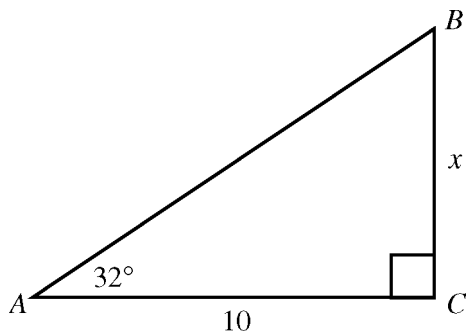
42. Right triangle ABC is pictured below.



Which equation gives the correct value for BC ?

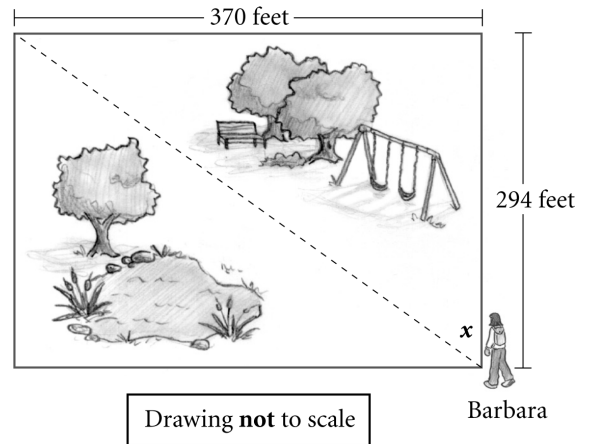
- A. $\sin 32^\circ = \frac{BC}{8.2}$ B. $\cos 32^\circ = \frac{BC}{10.6}$
 C. $\tan 58^\circ = \frac{8.2}{BC}$ D. $\sin 58^\circ = \frac{BC}{10.6}$

43. In the accompanying diagram, $m\angle A = 32^\circ$ and $AC = 10$. Which equation could be used to find x in $\triangle ABC$?



- A. $x = 10 \sin 32^\circ$ B. $x = 10 \cos 32^\circ$
 C. $x = 10 \tan 32^\circ$ D. $x = \frac{10}{\cos 32^\circ}$

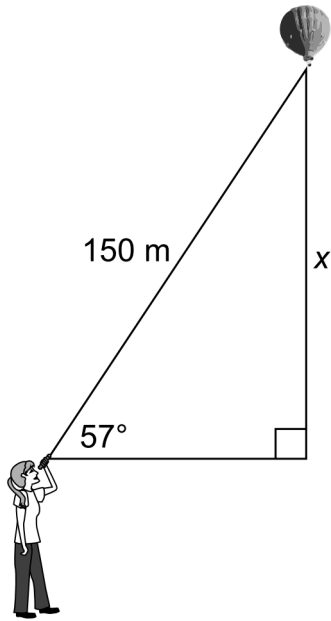
44. Barbara went for a walk in the city park. To cut across the rectangular park, she chose the path shown by the dotted line in the drawing below.



At what angle, x , did Barbara cut across the park? Round the answer to the nearest tenth of a degree.

- A. 37.4 B. 38.5 C. 51.5 D. 52.6

45. Use the diagram to answer the question.

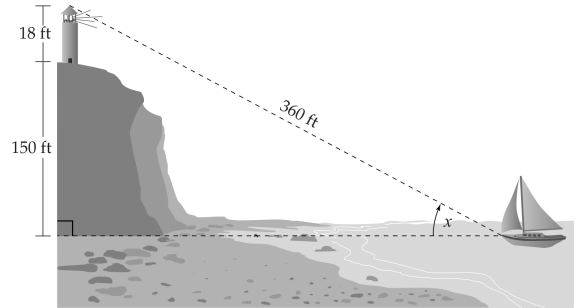


Note: Not to scale

Diana looks up at an angle of 57° and sees a hot air balloon 150 meters away. To the nearest meter, what is the value of x , the height of the hot air balloon above Diana's head?

- A. 82 meters B. 126 meters
C. 179 meters D. 231 meters

46. A lighthouse, which is 18 feet high, stands on a cliff that is 150 feet above sea level. The distance from the top of the lighthouse to a sailboat on the ocean is 360 feet.

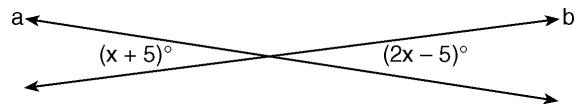


Note: The figure is not drawn to scale.

What is the angle of elevation (x) from the sailboat to the top of the lighthouse? Round the answer to the nearest degree.

- A. 25° B. 28° C. 62° D. 65°

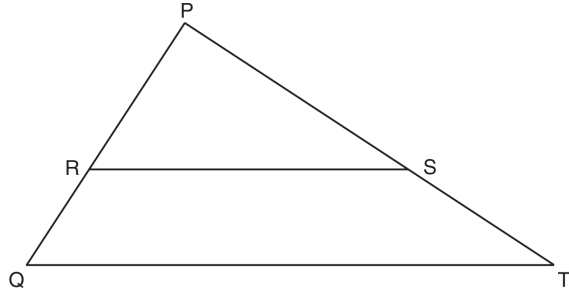
47. In the accompanying diagram, line a intersects line b .



What is the value of x ?

- A. -10 B. 5 C. 10 D. 90

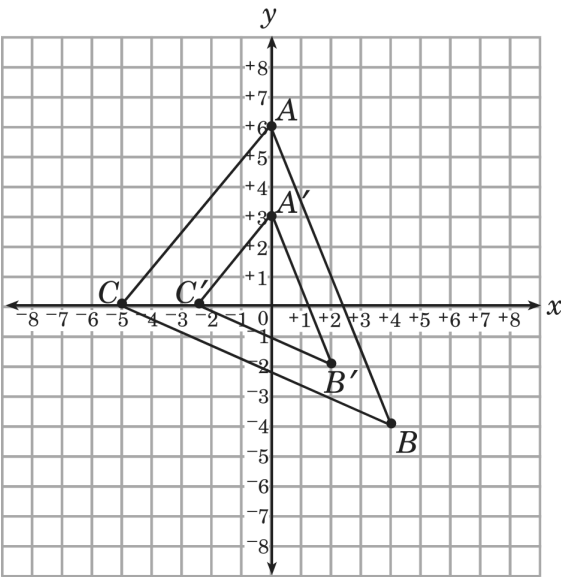
48. Triangle PQT with $\overline{RS} \parallel \overline{QT}$ is shown below.



If $PR = 12$, $RQ = 8$, and $PS = 21$, what is the length of \overline{PT} ?

- A. 14 B. 17 C. 35 D. 38

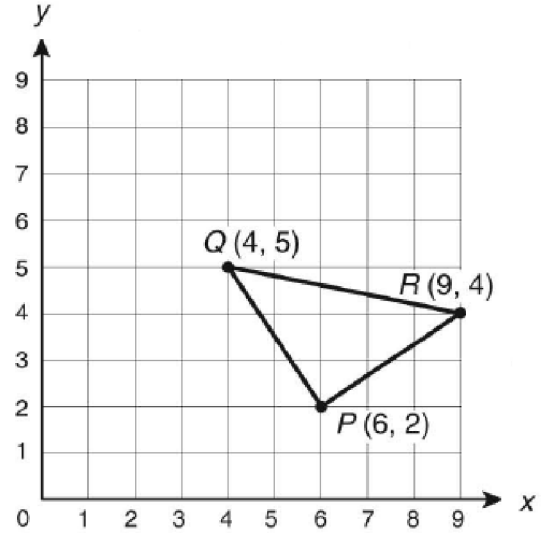
49. In the figure shown below, $\triangle A'B'C'$ is the image produced by applying a dilation to $\triangle ABC$.



What is the scale factor for this dilation?

- A. $\frac{1}{3}$ B. $\frac{2}{5}$ C. $\frac{1}{2}$ D. $\frac{5}{2}$

50. Triangle PQR is shown.



What are the coordinates of P' when $\triangle PQR$ is dilated by a scale factor of 3 using the origin as the center?

- A. (6, 18) B. $(3, \frac{2}{3})$
 C. $(\frac{2}{3}, 3)$ D. (18, 6)

Math 2: Test Review 12/18/2018

- | | |
|--|--|
| <p>1.
Answer:</p> <p>2.
Answer: B</p> <p>3.
Answer: C</p> <p>4.
Answer: B</p> <p>5.
Answer: A</p> <p>6.
Answer: A</p> <p>7.
Answer:</p> <p>8.
Answer: A</p> <p>9.
Answer: B</p> <p>10.
Answer: C</p> <p>11.
Answer: B</p> <p>12.
Answer: D</p> <p>13.
Answer: B</p> <p>14.
Answer: D</p> <p>15.
Answer: B</p> <p>16.
Answer: D</p> <p>17.
Answer: C</p> <p>18.
Answer: C</p> <p>19.
Answer: D</p> <p>20.
Answer: C</p> | <p>21.
Answer: C</p> <p>22.
Answer: D</p> <p>23.
Answer:</p> <p>24.
Answer: D</p> <p>25.
Answer: A</p> <p>26.
Answer: A</p> <p>27.
Answer: B</p> <p>28.
Answer: A</p> <p>29.
Answer: D</p> <p>30.
Answer: B</p> <p>31.
Answer: C</p> <p>32.
Answer: A</p> <p>33.
Answer: B</p> <p>34.
Answer:</p> <p>35.
Answer: B</p> <p>36.
Answer: C</p> <p>37.
Answer: A</p> <p>38.
Answer: B</p> <p>39.
Answer:</p> <p>40.
Answer: B</p> |
|--|--|

- 41.
Answer: A
- 42.
Answer: C
- 43.
Answer: C
- 44.
Answer: C
- 45.
Answer: B
- 46.
Answer:
- 47.
Answer: C
- 48.
Answer: C
- 49.
Answer: C
- 50.
Answer: D