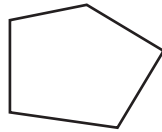


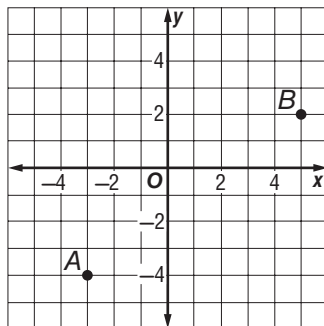
Course 3 Benchmark Test – Third Quarter

1. **SHORT ANSWER** Alfonso leans a 20-foot long ladder against a wall with the base of the ladder 6 feet from the wall. How far up the wall does the ladder reach? Round to the nearest tenth if necessary.
about 19.1 ft

2. What is the sum of the measures of the interior angles of a pentagon?

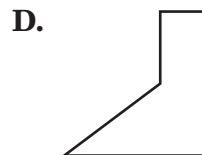
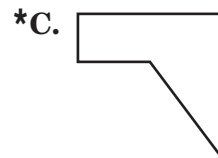
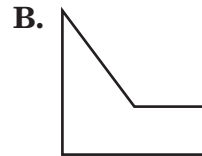
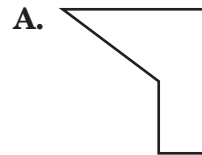
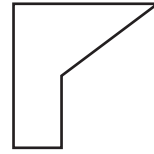


- A. 900°
 B. 720°
 *C. 540°
 D. 450°
3. What is the distance between points *A* and *B* shown on the coordinate plane?



- F. 8 units
 *G. 10 units
 H. 12 units
 I. 14 units

4. Which of the following figures show a 90° clockwise rotation of the figure shown below?



Course 3 Benchmark Test – Third Quarter *(continued)*

5. If point $H(-6, 2)$ is translated 4 units up and 3 units right, what are the coordinates of the translated image?

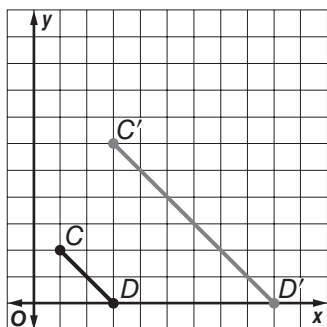
F. $H'(-2, 5)$

*G. $H'(-3, 6)$

H. $H'(-9, -2)$

I. $H'(-9, 6)$

6. The dilation of \overline{CD} is shown below. What is the scale factor of the dilation?



A. $\frac{1}{3}$

B. $\frac{1}{2}$

C. 2

*D. 3

7. Which of the following terms describes two lines that intersect to form right angles?

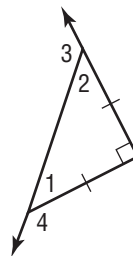
F. parallel

*G. perpendicular

H. skew

I. straight

8. What is the measure of angle 3?



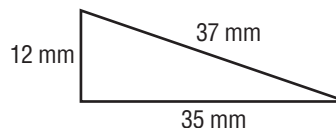
A. 45°

B. 90°

*C. 135°

D. 225°

9. **SHORT ANSWER** Determine whether the following figure is a right triangle. Justify your answer.



Yes, the figure is a right triangle because the sides satisfy the Pythagorean Theorem:
 $12^2 + 35^2 = 37^2$.

10. Point $N(6, -5)$ is reflected across the x -axis. What are the coordinates of the image?

F. $N'(-6, -5)$

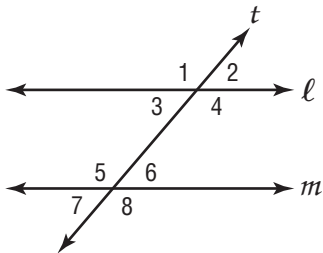
G. $N'(-5, 6)$

H. $N'(5, -6)$

*I. $N'(6, 5)$

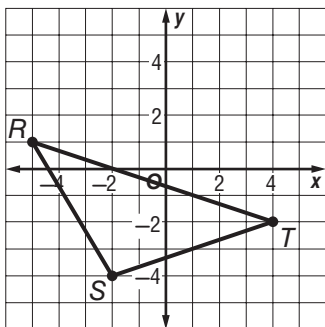
Course 3 Benchmark Test – Third Quarter (continued)

11. Parallel lines l and m are intersected by transversal t as shown below. Which of the following angles are *not* congruent?



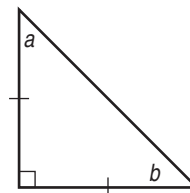
- *A. 1 and 2
- B. 2 and 3
- C. 3 and 6
- D. 4 and 8

12. Suppose triangle RST shown on the coordinate grid is reflected across the y -axis. Which ordered pair does *not* represent a vertex of the reflected triangle?



- F. (5, 1)
- G. (-4, -2)
- H. (2, -4)
- *I. (-2, 4)

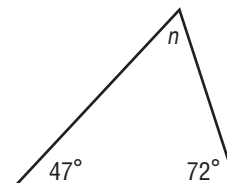
13. **SHORT ANSWER** Using the figure below, write a paragraph proof to show that $m\angle a = m\angle b = 45^\circ$.



Sample answer: The triangle is isosceles, so $m\angle a = m\angle b$. The sum of the angles of a triangle is 180° . So, $a + b + 90 = 180$, or $a + b = 90$. Since $a = b$, $a + a = 90$, or $a = 45$. So, $m\angle a = m\angle b = 45^\circ$.

14. What is the approximate distance between points $W(-4, 1)$ and $Z(3, 7)$? Round to the nearest tenth.
- A. 10.8 units
 - *B. 9.2 units
 - C. 8.3 units
 - D. 6.1 units

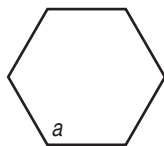
15. What is the value of n in the triangle below?



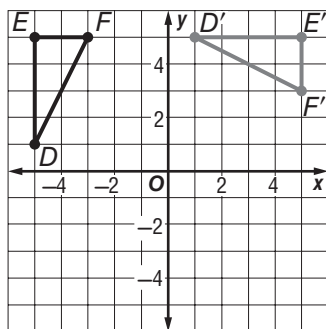
- F. 47°
- G. 51°
- *H. 61°
- I. 72°

Course 3 Benchmark Test – Third Quarter *(continued)*

16. What is the measure of an interior angle of a regular hexagon?



- *A. 120°
 - B. 135°
 - C. 720°
 - D. 810°
17. Which rotation best describes the transformation shown below?

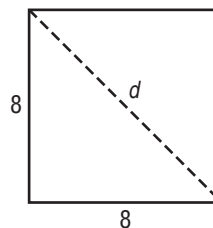


- F. 90° counterclockwise rotation
 - G. 270° clockwise rotation
 - H. 180° rotation
 - *I. 90° clockwise rotation
18. Which set of numbers could be the sides of a right triangle?
- A. 6, 8, 12
 - *B. 8, 15, 17
 - C. 4, 12, 16
 - D. 9, 11, 21

19. What is the approximate length of \overline{NP} with endpoints $N(7, 3)$ and $P(-6, -2)$? Round to the nearest tenth.

- F. 5.7 units
- G. 6.5 units
- H. 10.2 units
- *I. 13.9 units

20. **SHORT ANSWER** What is the length of the diagonal of a square with 8-foot sides? Round to the nearest tenth.

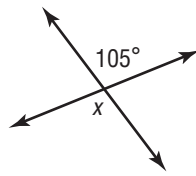


11.3 ft

21. Which transformation does *not* result in an image congruent to the original figure?
- A. translation
 - B. rotation
 - C. reflection
 - *D. dilation

Course 3 Benchmark Test – Third Quarter (continued)

22. What is the value of x in the figure below?



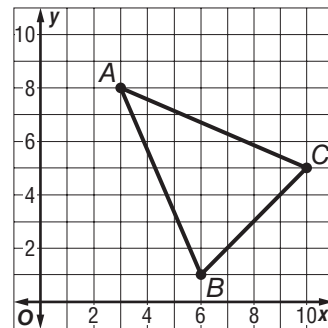
- F. 75°
 - G. 85°
 - *H. 105°**
 - I. 115°
23. Mary enlarged a 4- by 6-inch photo to a 10- by 15-inch photo. What is the scale factor of the dilation?

- A. 2
- *B. 2.5**
- C. 6
- D. 9

24. The legs of a right triangle measure 7 units and 24 units. What is the measure of the hypotenuse? Round to the nearest tenth if necessary.

- F. 17 units
- G. 20.4 units
- H. 23.0 units
- *I. 25 units**

25. **SHORT ANSWER** Prove that triangle ABC is an isosceles triangle.



Sample answer: Using the distance formula, $AB = \sqrt{58}$ and $AC = \sqrt{58}$. Since $AB = AC$, the triangle is isosceles.