Test, Form 1A

SCORE _____

Write the letter for the correct answer in the blank at the right of each question.

1. A 25,000 gallon swimming pool is being filled. Two hundred and fifty gallons are in it after 30 minutes. How many hours will it take to fill the pool? Use the $draw\ a\ diagram$ strategy.

A. 200 h

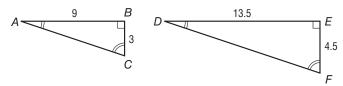
C. 50 h

B. 100 h

D. 25 h

1. ____

2. The triangles are similar. Which series of transformations maps $\triangle ABC$ onto $\triangle DEF$?



- **F.** translation followed by a rotation
- G. translation followed by a dilation
- H. rotation followed by a dilation
- I. reflection followed by a dilation

- 2. _____
- **3.** The length and width of a rectangle are 5 feet and 2 feet, respectively. A similar rectangle has a width of 8 feet. What is the length of the second rectangle?

A. 8 ft

C. 16 ft

B. 14 ft

D. 20 ft

3. _____

4. Which statement about the triangles at the right is true?

F. $\triangle ABC$ is not similar to $\triangle ADF$

G. $\triangle ABC$ is similar to $\triangle ADF$

H. $\angle BAC$ is not congruent to $\angle DAF$

I. $\triangle ABC$ is congruent to $\triangle ADF$



4. _____

5. Rectangle *DEFG* is similar to rectangle *JKLM*. Rectangle *DEFG* has a length of 5 units and a perimeter of 16 units. Rectangle *JKLM* has a length of 10 units. What is the perimeter of rectangle *JKLM*?

A. 8 units

C. 32 units

B. 20 units

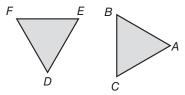
D. 64 units

5. _____

Test, Form 1A (continued)

SCORE ____

6. Triangle ABC is congruent to triangle DEF. Which series of transformations maps $\triangle DEF$ onto $\triangle ABC$?



- F. rotation followed by a translation
- G. translation followed by a dilation
- H. rotation followed by a dilation
- **I.** dilation followed by a reflection

- 6. _____
- **7.** Which of the following statements is *not* true if $\triangle JKL \cong \triangle MNO$?

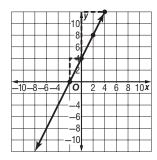
A.
$$\angle J \cong \angle M$$

C.
$$\angle N \cong \angle K$$

B.
$$\angle L \cong \angle O$$

D.
$$\angle L \cong \angle N$$

- 7. _____
- **8.** Which of the following statements is *not* true about the graph shown?



- **F.** The simplified ratio of the rise to the run of each triangle is 2.
- **G.** The slope of the line is 2.
- **H.** The slope of the line is -2.
- ${\bf I.}$ The smaller triangle and the larger triangle shown are similar.
- 8. _____
- **9.** Which statement is *not* true concerning any non-vertical line on the coordinate plane?
 - **A.** All of the slope triangles on the line are similar.
 - **B.** The slope is the same between any two distinct points on the line.
 - **C.** In the slope triangles, the ratios of the rise to the run are equal to the slope.
 - **D.** The slope varies between any two distinct points on the line.
- 9.

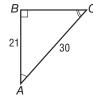
Test, Form 1B

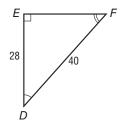
SCORE _____

Write the letter for the correct answer in the blank at the right of each question.

- **1.** A 72,000 gallon water tower is being drained. Two thousand gallons are drained in the first hour. How many hours will it take to drain the water tower? Use the *draw a diagram* strategy.
 - **A.** 72 h
- **B.** 36 h
- **C.** 18 h
- **D.** 9 h

- 1. _____
- **2.** The triangles are similar. Which series of transformations maps $\triangle ABC$ onto $\triangle DEF$?





- **F.** translation followed by a rotation
- **G.** translation followed by a dilation
- H. rotation followed by a dilation
- I. reflection followed by a dilation

- 2. _____
- **3.** The length and width of a rectangle are 4 feet and 3 feet, respectively. A similar rectangle has a width of 9 feet. What is the length of the second rectangle?
 - **A.** 9 ft

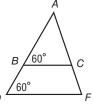
C. 14 ft

B. 12 ft

D. 16 ft

3. _____

- **4.** Which statement about the triangles at the right is true?
 - **F.** $\triangle ABC$ is similar to $\triangle ADF$
 - **G.** $\triangle ABC$ is not similar to $\triangle ADF$
 - **H.** $\angle BAC$ is not congruent to $\angle DAF$
 - **I.** $\triangle ABC$ is congruent to $\triangle ADF$



- 4. _____
- **5.** Rectangle *RSTU* is similar to rectangle *WXYZ*. Rectangle *RSTU* has a length of 6 units and a perimeter of 18 units. Rectangle *WXYZ* has a length of 12 units. What is the perimeter of rectangle *WXYZ*?
 - **A.** 18 units

C. 36 units

B. 24 units

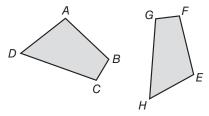
D. 72 units

5. _____

Test, Form 1B (continued)

SCORE _

6. The figures below are congruent. Which series of transformations maps figure *ABCD* onto *EFGH*?



- **F.** rotation followed by a translation
- G. rotation followed by a dilation
- H. reflection followed by a translation
- I. reflection followed by a rotation

- **7.** Which of the following statements is true if $\triangle JKL \cong \triangle MNO$?

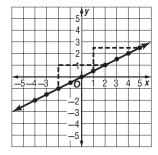
A.
$$\angle J \cong \angle N$$

C.
$$\angle N \cong \angle K$$

B.
$$\angle L \cong \angle M$$

D.
$$\angle L \cong \angle N$$

- 7.
- **8.** Which of the following statements is *not* true about the graph shown?



- **F.** The simplified ratio of the rise to the run of each triangle is $\frac{1}{2}$.
- **G.** The slope of the line is $\frac{1}{2}$. **H.** The slope of the line is $-\frac{1}{2}$.
- **I.** The two triangles shown are similar.

- 9. Which statement is true concerning any non-vertical line on the coordinate plane?
 - A. All of the slope triangles on the line are congruent.
 - **B.** The slope is the same between any two distinct points on the line.
 - C. In the slope triangles, the ratios of the rise to the run are equal to the absolute value of the *y*-coordinate.
 - **D.** The slope varies between any two distinct points on the line.
- 9.

Test, Form 2A

SCORE ____

Write the letter for the correct answer in the blank at the right of each question.

1. A survey of 12 students showed that 7 liked football, 10 liked basketball, and 5 liked both. How many students just liked basketball? Use the *draw a diagram* strategy.

A. 12

C. 5

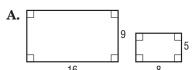
B. 10

D. 2

1.

- **2.** Debbie is painting an image on a piece of art canvas. The image she is reproducing is 3 inches by 5 inches. She enlarges the dimensions 4 times. Which of the following statements is *not* true?
 - **F.** The perimeter of the original image and the perimeter of the new image are related by a scale factor of 4.
 - G. The area of the new image is 4 times the area of the original image.
 - **H.** The area of the original image and the area of the new image are related by a scale factor of 16.
 - **I.** The perimeter of the original image is $\frac{1}{4}$ the perimeter of the new image.
- 2. _____

3. Which pair of polygons is similar?



C. 3 3



B. 4 6

9 18

- 3. _____
- **4.** Mitzi is 64 inches tall and casts a 48 inch shadow. Her daughter, who is standing next to her, casts a 30 inch shadow. How tall is her daughter?

F. 47.5 in.

H. 35 in.

G. 40 in.

I. 22.5 in.

4

5. Which of the following statements is *not* true if quadrilateral ABCD is congruent to quadrilateral RSTU?

A. $\overline{AB} \cong \overline{RS}$

C. $\angle T \cong \angle C$

B. $\overline{CD} \cong \overline{TU}$

D. $\angle A \cong \angle U$

5. _____

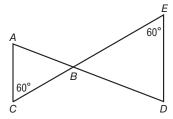
Test, Form 2A (continued)

SCORE _____

6. The length of a rectangle is 18 centimeters and the width is 6 centimeters. A similar rectangle has a width of 2 centimeters. What is the length of the second rectangle?

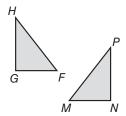


7. Determine whether the triangles are similar. If so, write a similarity statement.



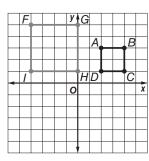
7. _____

8. Determine if the two figures are congruent by using transformations. Explain your reasoning.



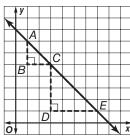
8.

9. Determine if the two figures are similar by using transformations. Explain your reasoning.



0

10. Write a proportion comparing the rise to the run for each of the similar slope triangles shown at the right. Then find the numeric value.



10

10.

Test, Form 2B

SCORE _____

Write the letter for the correct answer in the blank at the right of each question.

- **1.** A survey of 11 students showed that 8 liked science, 7 liked mathematics, and 4 liked both. How many students just liked science? Use the *draw a diagram* strategy.
 - **A.** 8

C. 5

B. 7

D. 4

1. _____

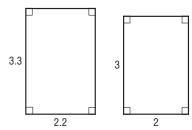
- **2.** Selena is painting an image on a piece of art canvas. The image she is reproducing is 4 inches by 6 inches. She enlarges the dimensions 3 times. Which of the following statements is *not* true?
 - **F.** The perimeter of the original image and the perimeter of the new image are related by a scale factor of 3.
 - **G.** The perimeter of the original image is $\frac{1}{3}$ the perimeter of the new image.
 - **H.** The area of the new image is 3 times the area of the original image.
 - **I.** The area of the original image and the area of the new image are related by a scale factor of 9.
- 2. _____

3. Which pair of polygons is similar?

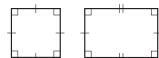
A.



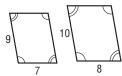
(



В.



D.



- 3. _____
- **4.** Dominic is 72 inches tall and casts a 60 inch shadow. His son, who is standing next to him, casts a 50 inch shadow. How tall is his son?
 - **F.** 41.7 in.

H. 68 in.

G. 60 in.

I. 86.4 in.

- 4. _____
- **5.** Which of the following statements is *not* true if $\triangle JKL$ is congruent to $\triangle RST$?

A.
$$\angle J \cong \angle R$$

C.
$$\overline{JK} \cong \overline{RS}$$

B.
$$\angle K \cong \angle T$$

D.
$$\overline{KL} \cong \overline{ST}$$

5.

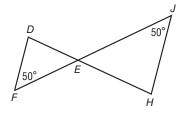
Test, Form 2B (continued)

SCORE _____

6. The length of a rectangle is 14 centimeters and the width is 5 centimeters. A similar rectangle has a width of 2.5 centimeters. What is the length of the second rectangle?

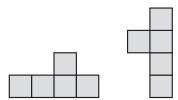


7. Determine whether the triangles are similar. If so, write a similarity statement.



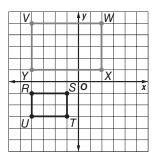
7.

8. Determine if the two figures are congruent by using transformations. Explain your reasoning.



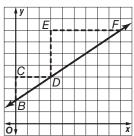
8. _____

9. Determine if the two figures are similar by using transformations. Explain your reasoning.



Q

10. Write a proportion comparing the rise to the run for each of the similar slope triangles shown at the right. Then find the numeric value.



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