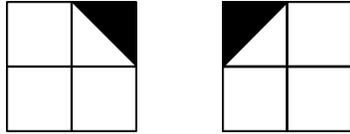


Name: \_\_\_\_\_

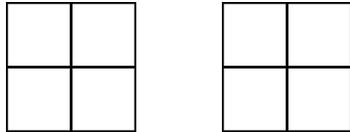
Date: \_\_\_\_\_

1. Below each given figure, show the appropriate transformations.

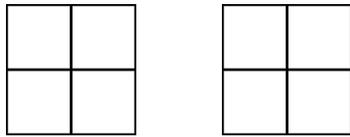
Given Figure



90° rotation



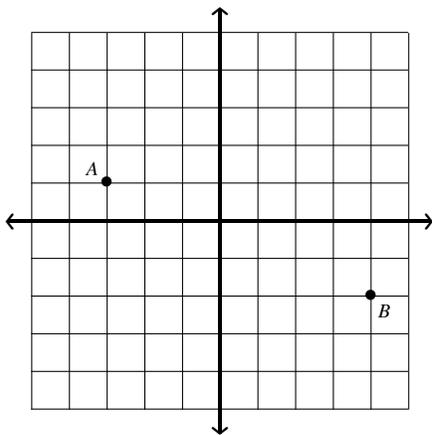
180° rotation



2. If  $\angle a \cong \angle b$ , and  $m\angle a = 50^\circ$ , what is the  $m\angle b$ ?

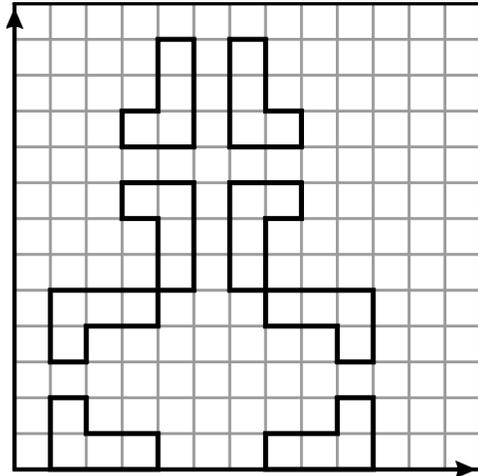
A.  $15^\circ$     B.  $35^\circ$     C.  $45^\circ$     D.  $50^\circ$

3. Draw line segment  $AB$  on the coordinate plane. Find the length of line segment  $AB$  to the nearest tenth.



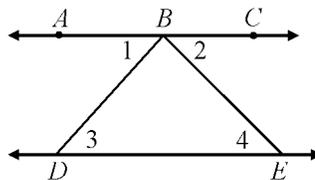
A. 3.2    B. 6.2    C. 7.6    D. 10.0

4. Ted drew this design on the coordinate grid.



Which statement is true about his design?

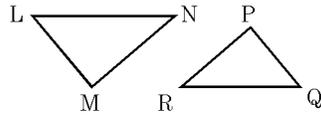
- A. The design was made by rotating the shape nine times.  
 B. The design was made by a series of translations.  
 C. The design was made using reflections and rotations.  
 D. The design was made using reflections and translations.
5. In the figure,  $\overleftrightarrow{AC}$  is parallel to  $\overleftrightarrow{DE}$ , and  $\angle DBE$  is right. Which of the following statements may be false?



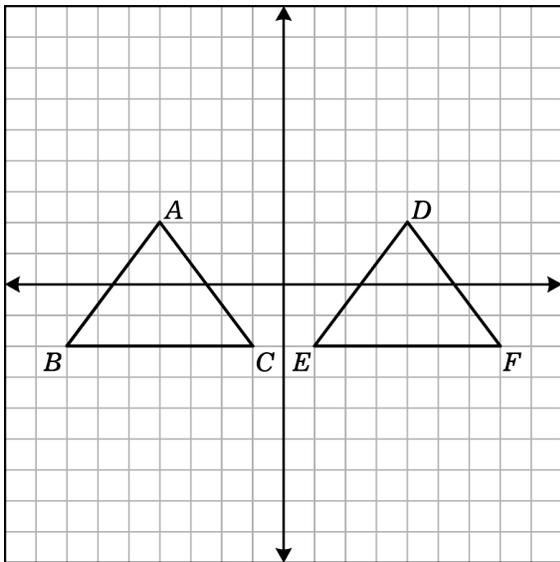
- A.  $\overline{DB} \cong \overline{BE}$   
 B. measure of  $\angle 2$  is less than  $90^\circ$   
 C.  $\angle 2$  and  $\angle 3$  are complementary  
 D.  $\angle 1$  and  $\angle 4$  are congruent

6. Triangle  $LMN$  is similar to triangle  $PQR$ .  
If  $m\angle L = 35^\circ$  and  $m\angle N = 20^\circ$ , find  $m\angle Q$ ?

- A.  $70^\circ$   
B.  $90^\circ$   
C.  $125^\circ$   
D.  $55^\circ$



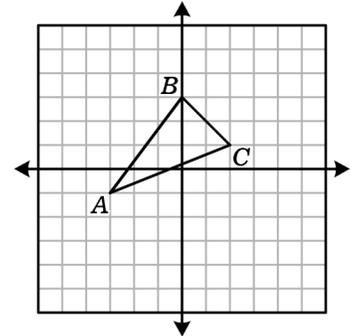
7. If you wanted to move triangle  $DEF$  to make it overlap perfectly with triangle  $ABC$ , how would you translate (slide) it?



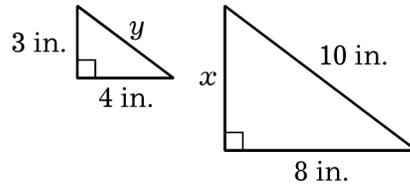
- A. Translate  $-2$  units in the  $y$  direction  
B. Translate  $+2$  units in the  $x$  direction and  $+2$  units in the  $y$  direction.  
C. Translate  $-8$  units in the  $x$  direction and  $-2$  units in the  $y$  direction.  
D. Translate  $-8$  units in the  $x$  direction.

8.  $\triangle UVW$  is congruent to  $\triangle ABC$ . If  $U(1, 1)$  corresponds to  $A$  and  $V(5, -2)$  corresponds to  $B$ , then the coordinates for  $W$  must be \_\_\_\_\_.

- A.  $(7, -4)$   
B.  $(3, 0)$   
C.  $(3, -4)$   
D.  $(7, 0)$



9. The pair of triangles are similar.

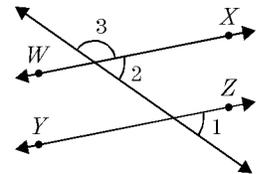


What is the value of  $y$ ?

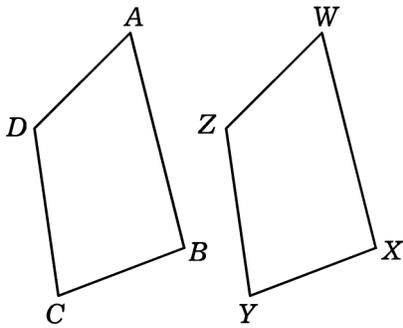
- A. 3 in    B. 5 in    C. 6 in    D. 7 in

10.  $\overleftrightarrow{WX}$  is parallel to  $\overleftrightarrow{YZ}$ . If the measure of  $\angle 3$  is  $140^\circ$ , what is the measure of  $\angle 1$ ?

- A.  $140^\circ$     B.  $70^\circ$   
C.  $40^\circ$     D.  $10^\circ$



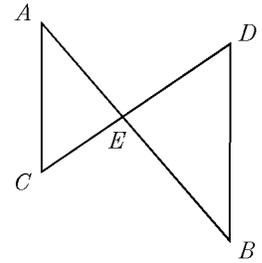
11.  $ABCD$  and  $WXYZ$  are quadrilaterals.  $ABCD \cong WXYZ$ . Which line segment of  $WXYZ$  is congruent to the line segment  $AD$  ?



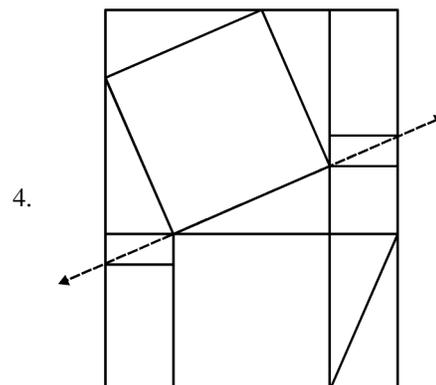
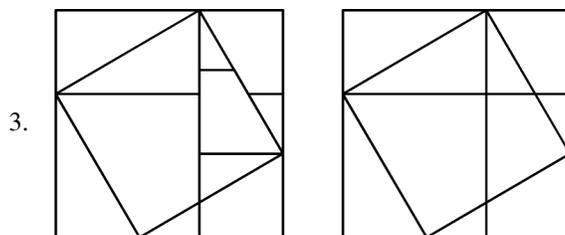
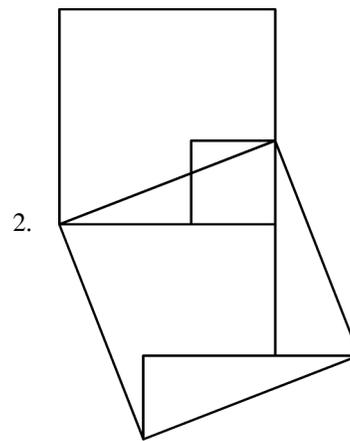
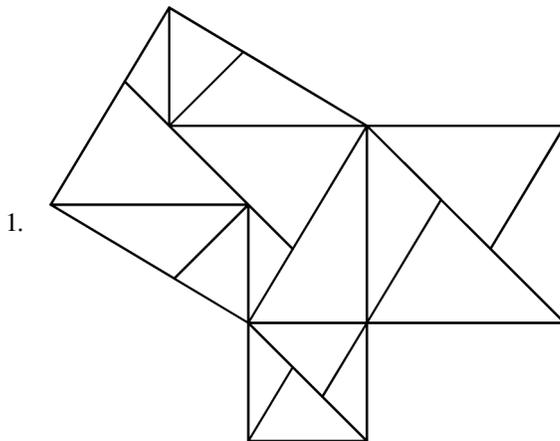
- A.  $\overline{YZ}$     B.  $\overline{WX}$     C.  $\overline{XY}$     D.  $\overline{WZ}$

12. In the diagram,  $\overleftrightarrow{AB}$  and  $\overleftrightarrow{CD}$  intersect at  $E$  and  $\overline{AC} \parallel \overline{DB}$ . If  $m\angle A = 41$  and  $m\angle D = 56$ , what is  $m\angle AEC$  ?

- A. 34    B. 49  
C. 83    D. 90



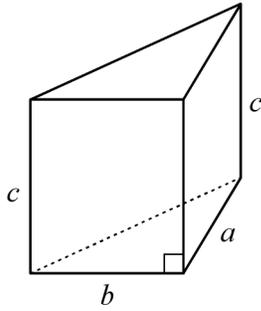
13. The figures below show various ways of proving the Pythagorean Theorem by *re-arrangement* or *dissection*.



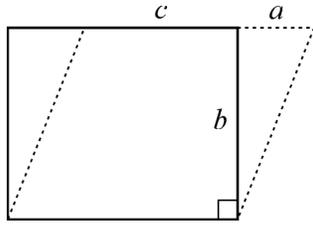
Choose two of the figures and explain how they prove the Pythagorean Theorem. As part of your explanation, color-code the pieces which are re-arranged.

14. Which of the following figures would be useful for proving the Pythagorean theorem?

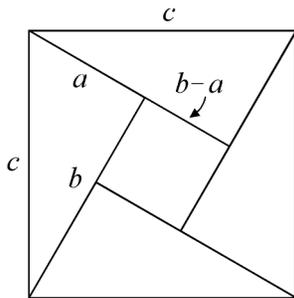
A.



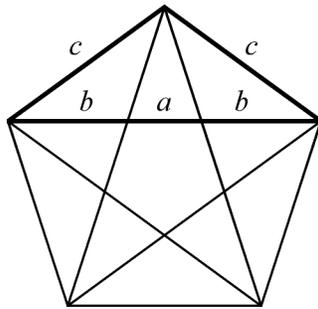
B.



C.

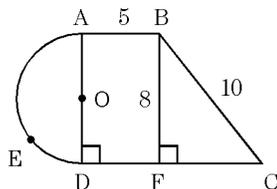


D.



15. In the diagram shown,  $AODE$  is a semicircle with diameter  $\overline{AD}$ ,  $ABCD$  is a trapezoid,  $\overline{BF}$  and  $\overline{AD}$  are perpendicular to  $\overline{DC}$ ,  $\overline{AB}$  is parallel to  $\overline{CD}$ ,  $AB = 5$ ,  $BF = 8$ , and  $BC = 10$ . Find the approximate total area of  $AODE$  and  $ABFD$ .

- A. 23.42 units<sup>2</sup>  
 B. 65.13 units<sup>2</sup>  
 C. 94.25 units<sup>2</sup>  
 D. 144.51 units<sup>2</sup>

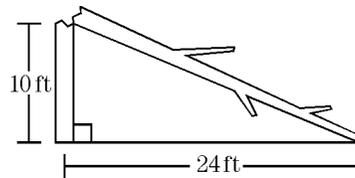


16. A fireman's 35 foot ladder is leaning against an office window. If the base of the ladder is 20 feet from the building, how high above the ground is the window?

17. Calculate the distance between the points  $M(-1, -8)$  and  $N(4, -1)$ .

- A.  $\sqrt{58}$     B.  $\sqrt{74}$     C.  $\sqrt{106}$     D. 12

18. A tree breaks and falls as shown.



What was the original height of the tree?

- A. 16 ft    B. 23 ft    C. 32 ft    D. 36 ft

19. Find the volume of a cylinder (in cubic feet) which is 5 feet high and has a diameter of 16 inches. (Leave answer in terms of  $\pi$ .)

- A.  $\frac{10}{9}\pi \text{ ft}^3$     B.  $\frac{20}{9}\pi \text{ ft}^3$   
 C.  $\frac{10}{3}\pi \text{ ft}^3$     D.  $72\pi \text{ ft}^3$

20. The formula for finding the volume of a cone is  $V = \frac{1}{3}Bh$ , where  $V$  is the volume,  $B$  is the area of the base, and  $h$  is the height. A cone has a base with an area of 56 square centimeters and a height of 12 centimeters. What is the volume of the cone?

- A. 156 cm<sup>3</sup>    B. 208 cm<sup>3</sup>  
 C. 224 cm<sup>3</sup>    D. 248 cm<sup>3</sup>

1.  
Answer: [graphs]  
Objective: 7.8

2.  
Answer: D  
Objective: 8.G.2

3.  
Answer: C  
Objective: 8.G.8

4.  
Answer: C  
Objective: 8.G.1

5.  
Answer: A  
Objective: 8.G.5

6.  
Answer: C  
Objective: 8.G.4

7.  
Answer: D  
Objective: 8.G.3

8.  
Answer: C  
Objective: 8.G.3

9.  
Answer: B  
Objective: 8.G.4

10.  
Answer: C  
Objective: 8.G.5

11.  
Answer: D  
Objective: 8.G.2

12.  
Answer: C  
Objective: 8.G.5

13.  
Answer: [answers vary]  
Objective: 8.G.6

14.  
Answer: C  
Objective: 8.G.6

15.  
Answer: B  
Objective: 8.G.7

16.  
Answer:  $\sqrt{825}$  feet or 28.7 feet  
Objective: 8.G.7

17.  
Answer: B  
Objective: 8.G.8

18.  
Answer: D  
Objective: 8.G.7

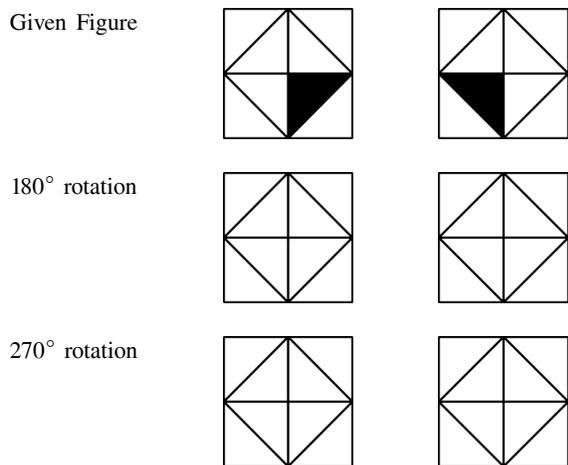
19.  
Answer: B  
Objective: 8.G.9

20.  
Answer: C  
Objective: 8.G.9

Name: \_\_\_\_\_

Date: \_\_\_\_\_

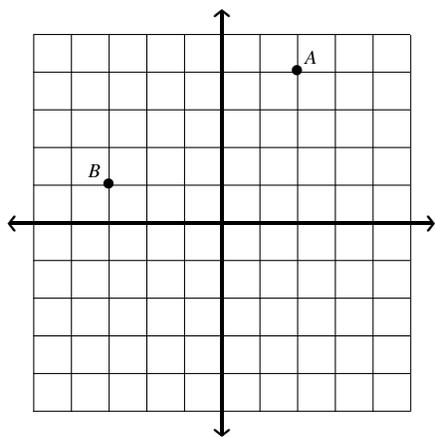
1. Below each given figure, show the appropriate transformations.



2. If  $\angle a \cong \angle b$ , and  $m\angle a = 15^\circ$ , what is the  $m\angle b$ ?

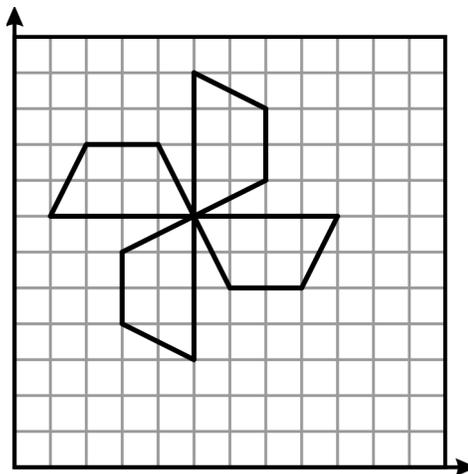
A.  $15^\circ$     B.  $35^\circ$     C.  $45^\circ$     D.  $50^\circ$

3. Draw line segment  $AB$  on the coordinate plane. Find the length of line segment  $AB$  to the nearest tenth.



A. 5.8    B. 6.2    C. 7.3    D. 8.5

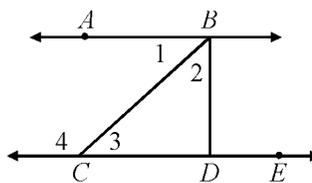
4. Toshiro drew figure A and then used figure A to form the following design.



Which statement is true about his ending design?

- A. The design was made by rotating the shape three times.  
 B. The design was made by a series of translations.  
 C. The design was made using reflections and rotations.  
 D. The design was made using reflections and translations.

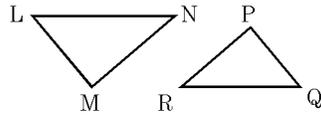
5. In the figure,  $\overleftrightarrow{AB}$  is parallel to  $\overleftrightarrow{CD}$  and  $\angle BDC$  is right. Which of the following statements may be false?



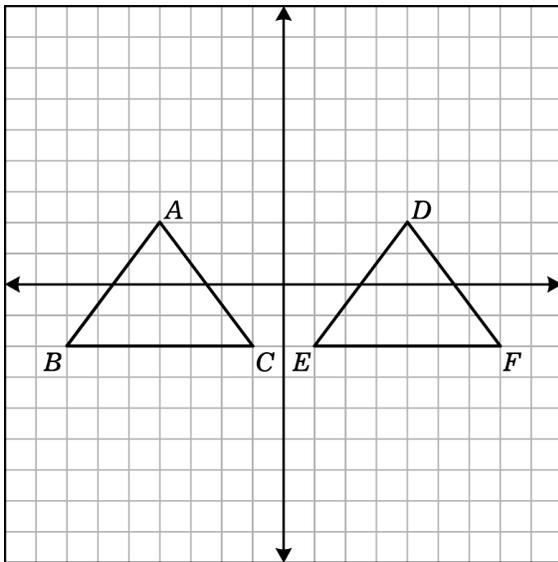
- A.  $\overline{AB} \perp \overline{BD}$   
 B. measure of  $\angle 3$  is less than  $90^\circ$   
 C.  $\angle 2$  and  $\angle 4$  are supplementary  
 D.  $\angle 1$  and  $\angle 3$  are congruent

6. Triangle  $LMN$  is similar to triangle  $PQR$ .  
If  $m\angle L = 65^\circ$  and  $m\angle N = 30^\circ$ , find  $m\angle Q$ ?

- A.  $85^\circ$   
B.  $90^\circ$   
C.  $65^\circ$   
D.  $30^\circ$



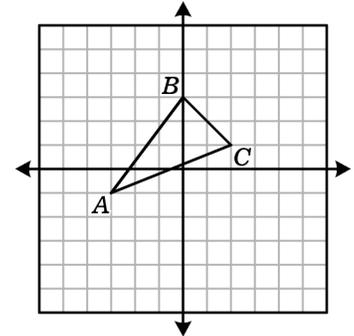
7. If you wanted to move triangle  $ABC$  to make it overlap perfectly with triangle  $DEF$ , how would you translate (slide) it?



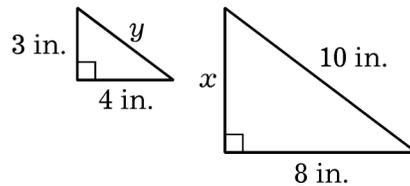
- A. Translate +8 units in the  $x$  direction  
B. Translate +2 units in the  $x$  direction and +2 units in the  $y$  direction.  
C. Translate -8 units in the  $x$  direction and -8 units in the  $y$  direction.  
D. Translate -2 units in the  $y$  direction.

8.  $\triangle UVW$  is congruent to  $\triangle ABC$ . If  $U(1, -2)$  corresponds to  $A$  and  $V(5, -5)$  corresponds to  $B$ , then the coordinates for  $W$  must be \_\_\_\_\_.

- A.  $(0, 6)$   
B.  $(6, 0)$   
C.  $(-3, 7)$   
D.  $(3, -7)$



9. The pair of triangles are similar.

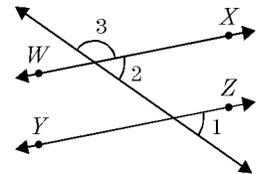


What is the value of  $x$ ?

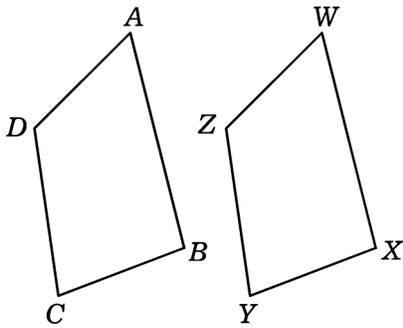
- A. 4 in    B. 6 in    C. 10 in    D. 12 in

10.  $\overleftrightarrow{WX}$  is parallel to  $\overleftrightarrow{YZ}$ . If the measure of  $\angle 3$  is  $150^\circ$ , what is the measure of  $\angle 1$ ?

- A.  $150^\circ$     B.  $120^\circ$   
C.  $30^\circ$     D.  $10^\circ$



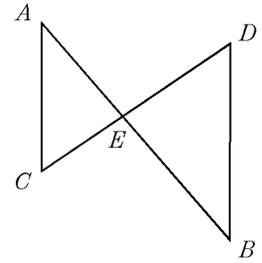
11.  $ABCD$  and  $WXYZ$  are quadrilaterals.  $ABCD \cong WXYZ$ . Which line segment of  $WXYZ$  is congruent to the line segment  $CD$  ?



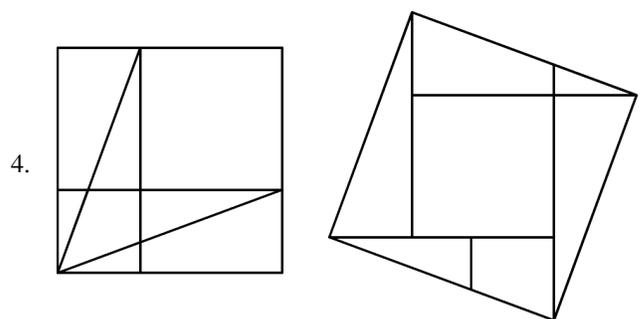
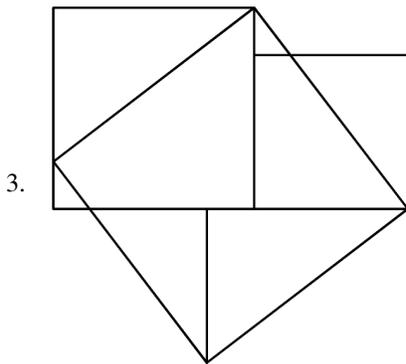
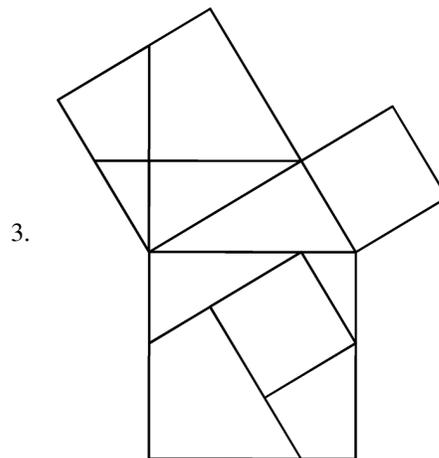
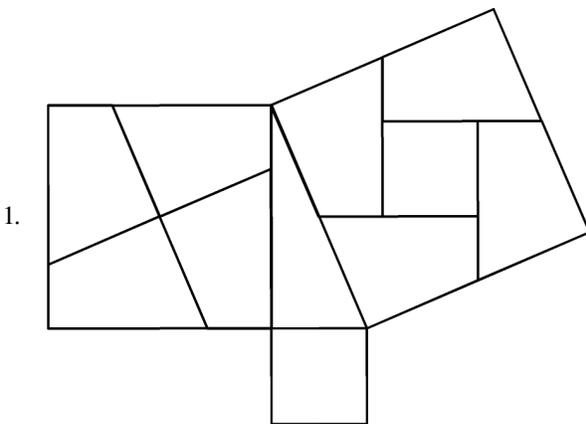
- A.  $\overline{XY}$     B.  $\overline{YZ}$     C.  $\overline{WZ}$     D.  $\overline{XW}$

12. In the diagram,  $\overleftrightarrow{AB}$  and  $\overleftrightarrow{CD}$  intersect at  $E$  and  $\overline{AC} \parallel \overline{DB}$ . If  $m\angle C = 58$  and  $m\angle B = 35$ , what is  $m\angle BED$  ?

- A. 32    B. 65  
C. 80    D. 87



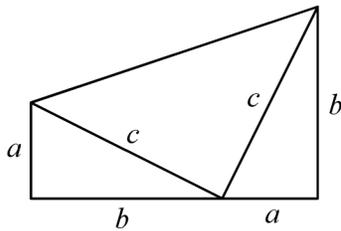
13. The figures below show various ways of proving the Pythagorean Theorem by *re-arrangement* or *dissection*.



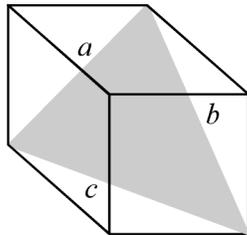
Choose two of the figures and explain how they prove the Pythagorean Theorem. As part of your explanation, color-code the pieces which are re-arranged.

14. Which of the following figures would be useful for proving the Pythagorean theorem?

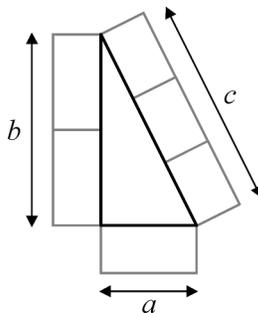
A.



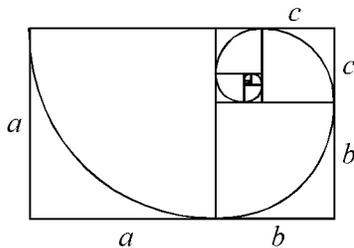
B.



C.



D.



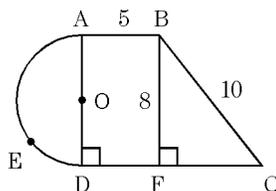
15. In the diagram shown,  $AODE$  is a semicircle with diameter  $\overline{AD}$ ,  $ABCD$  is a trapezoid,  $\overline{BF}$  and  $\overline{AD}$  are perpendicular to  $\overline{DC}$ ,  $\overline{AB}$  is parallel to  $\overline{CD}$ ,  $AB = 5$ ,  $BF = 8$ , and  $BC = 10$ . Find the approximate area of the entire figure.

A. 89.13 units<sup>2</sup>

B. 98.31 units<sup>2</sup>

C. 153.58 units<sup>2</sup>

D. 178.42 units<sup>2</sup>



16. A 10 foot ladder is leaning against a building. The foot of the ladder is on the ground 8 feet away from the base of the building. How high on the building does the ladder reach?

17. Given the points  $A(-2, 3)$  and  $(7, -1)$ , find the length of  $\overline{AB}$ .

A.  $\sqrt{97}$  B.  $\sqrt{85}$  C.  $\sqrt{29}$  D.  $2\sqrt{5}$

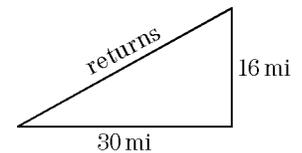
18. Joe drives 30 miles due east then 16 miles due north. He returns directly to where he begins. How far does he have to drive on his return trip?

A. 28 mi

B. 31 mi

C. 33 mi

D. 34 mi



19. Find the volume of a cylinder (in cubic feet) which is  $1\frac{1}{2}$  feet high and has a diameter of 8 inches. (Leave answer in terms of  $\pi$ .)

A.  $\frac{1}{6}\pi \text{ ft}^3$

B.  $\frac{2}{3}\pi \text{ ft}^3$

C.  $\pi \text{ ft}^3$

D.  $12\pi \text{ ft}^3$

20. The formula for finding the volume of a cone is  $V = \frac{1}{3}Bh$ , where  $V$  is the volume,  $B$  is the area of the base, and  $h$  is the height. What is the volume of a cone if the area of the base is 33 square inches and the height is 8 inches?

A. 72 in<sup>3</sup> B. 88 in<sup>3</sup> C. 96 in<sup>3</sup> D. 98 in<sup>3</sup>

CCSS Grade 8 Post-Test 3/14/2018

1.  
Answer: [graphs]  
Objective: 7.8

2.  
Answer: A  
Objective: 8.G.2

3.  
Answer: A  
Objective: 8.G.8

4.  
Answer: A  
Objective: 8.G.1

5.  
Answer: C  
Objective: 8.G.5

6.  
Answer: A  
Objective: 8.G.4

7.  
Answer: A  
Objective: 8.G.3

8.  
Answer: D  
Objective: 8.G.3

9.  
Answer: B  
Objective: 8.G.4

10.  
Answer: C  
Objective: 8.G.5

11.  
Answer: B  
Objective: 8.G.2

12.  
Answer: D  
Objective: 8.G.5

13.  
Answer: [answers vary]  
Objective: 8.G.6

14.  
Answer: A  
Objective: 8.G.6

15.  
Answer: A  
Objective: 8.G.7

16.  
Answer: 6 ft  
Objective: 8.G.7

17.  
Answer: A  
Objective: 8.G.8

18.  
Answer: D  
Objective: 8.G.7

19.  
Answer: A  
Objective: 8.G.9

20.  
Answer: B  
Objective: 8.G.9