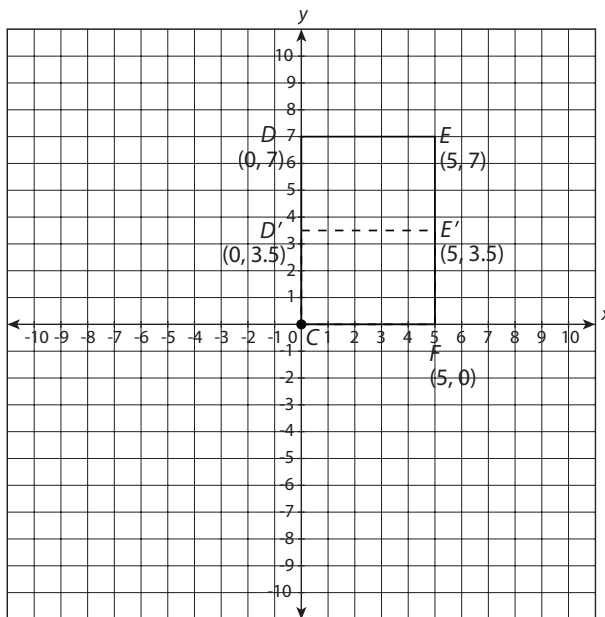


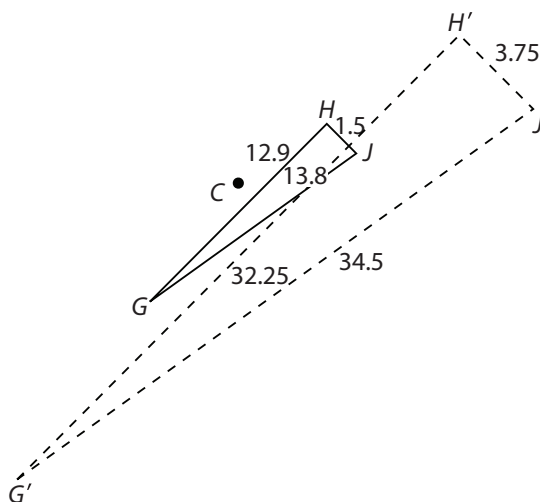
## Unit 2 Review

1. Does the graph below represent a dilation? Why or why not?



- a. Yes, because the preimage sides are parallel with the corresponding image sides.
  - b. No, because the preimage sides are not parallel with the corresponding image sides.
  - c. Yes, because there is a single scale factor and a center of dilation.
  - d. No, because the scale factors of the image sides are not all consistent with the preimage sides.
- 2.

Determine the scale factor of the dilation below.



- a.  $k = 1.07$
- b.  $k = 2.5$
- c.  $k = 0.4$
- d.  $k = 9.2$

3.

$\triangle FGH$  has vertices  $F(3, -5)$ ,  $G(8, -6)$ , and  $H(6, -7)$ . If  $\triangle FGH$  is dilated through the origin with a scale factor of  $\frac{3}{4}$ , what are the vertices of  $\triangle F'G'H'$ ?

- a.  $F'(-3, 5)$ ,  $G'(-8, 6)$ , and  $H'(-6, 7)$
- b.  $F'(2.25, -3.75)$ ,  $G'(6, -4.5)$ , and  $H'(4.5, -5.25)$
- c.  $F'\left(4, \frac{20}{3}\right)$ ,  $G'\left(\frac{32}{3}, -8\right)$ , and  $H'\left(8, -\frac{28}{3}\right)$
- d.  $F'(-5, 3)$ ,  $G'(-6, -8)$ , and  $H'(-7, 6)$

4.

A triangle congruent to  $\triangle ABC$  is to be constructed. Only three components are measured. Which three components, if constructed in the order listed, will always create a congruent triangle?

- a. side-side-angle
- b. angle-angle-angle
- c. angle-side-angle
- d. Only the three side lengths can be used to create a congruent triangle.

5.

Which set of equivalent measures does not indicate that two triangles must be congruent?

- a. angle-angle-angle
- b. angle-side-angle
- c. side-angle-side
- d. angle-angle-side

6.

For  $\triangle ABC$  and  $\triangle DEF$ , the following is given:  $\angle A \cong \angle D$ ,  $\angle B \cong \angle E$ ,  $\angle C \cong \angle F$ . By which triangle congruence statement can it be concluded that the triangles are congruent?

- a. SSS
- b. SAS
- c. ASA
- d. It cannot be determined if the triangles are congruent.

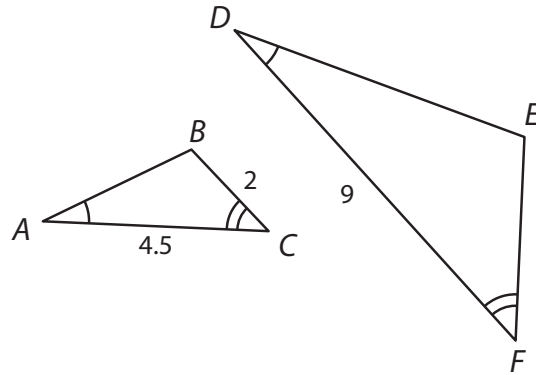
7.

$\triangle ABC$  has undergone a series of similarity transformations to produce  $\triangle EFG$ . Which of the following statements is NOT true?

- a. The angles of  $\triangle EFG$  are proportional to the angles of  $\triangle ABC$ .
- b. The angles of  $\triangle EFG$  are the same as the angles of  $\triangle ABC$ .
- c. The sides of  $\triangle EFG$  are proportional to the sides of  $\triangle ABC$ .
- d.  $\triangle ABC$  is similar to  $\triangle EFG$ .

8.

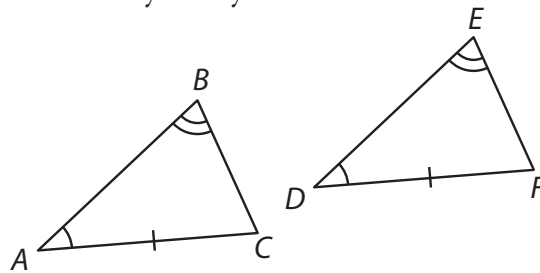
What is the length of  $\overline{EF}$ ?



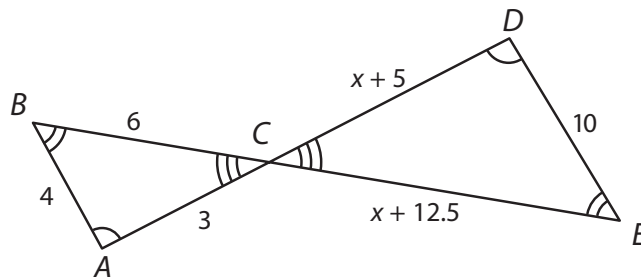
- a. 4 units
- b. 1 unit
- c. 9 units
- d. 2 units

9.

Are the two triangles similar? Why or why not?



- a. Yes, they are similar because of the AA Similarity Statement.
  - b. Yes, they are similar because of the ASA Congruence Statement.
  - c. No, they are not similar because they are congruent.
  - d. There is not enough information to determine similarity.
10. Identify the similar triangles. Find  $x$  and the missing side lengths.



- a.  $\triangle ABC \sim \triangle CDE$  ;  $x = 2.5$ ;  $DC = 7.5$ ;  $EC = 15$
- b.  $\triangle ABC \sim \triangle DEC$  ;  $x = 2.5$ ;  $DC = 15$ ;  $EC = 7.5$
- c.  $\triangle ABC \sim \triangle DEC$  ;  $x = 2.5$ ;  $DC = 7.5$ ;  $EC = 15$
- d.  $\triangle ABC \sim \triangle DEC$  ;  $x = 5.2$ ;  $DC = 10.5$ ;  $EC = 18$

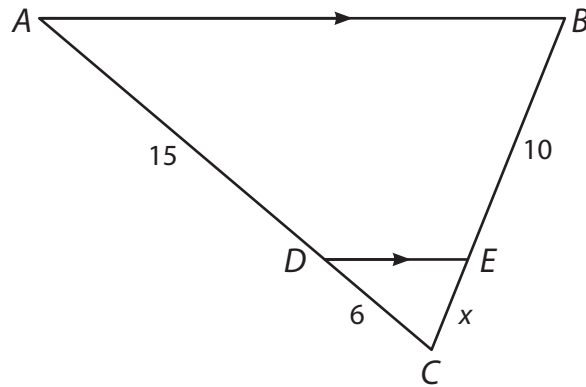
11.

The length of a building's shadow is 107.2 feet. At the same time of day, a 1.8-foot-tall tree casts a shadow that is 2.4 feet long. What is the height of the building?

- a. 80.4 feet
- b. 142.9 feet
- c. 24.8 feet
- d. 463.1 feet

12.

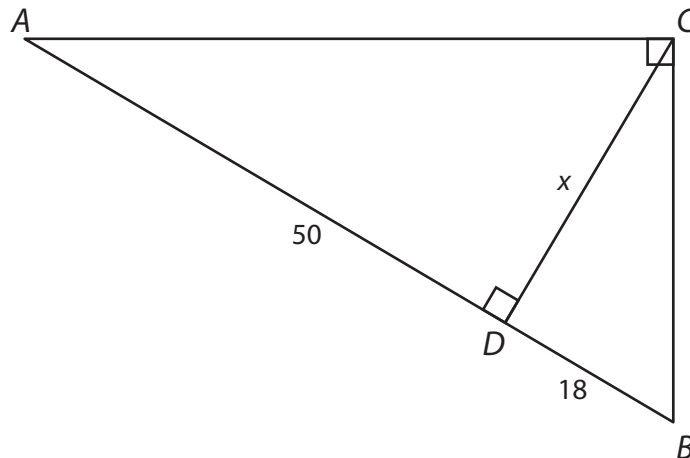
$\triangle ABC \sim \triangle DEC$ . What is the length of  $\overline{EC}$ ?



- a. 25 units
- b. 9 units
- c. 4 units
- d. There is not enough information to determine the length of  $\overline{EC}$ .

13.

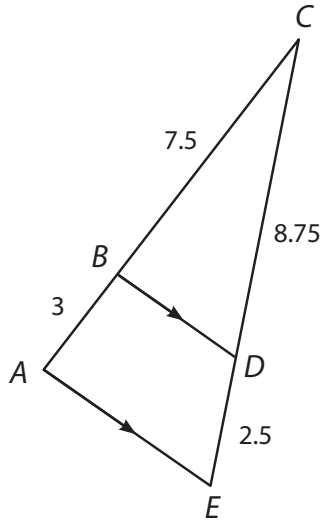
$\triangle ABC$  is a right triangle. Find the length of  $x$ , which is the altitude of  $\triangle ABC$ .



- a. 30 units
- b. 7.7 units
- c. 2.7 units
- d. There is not enough information to determine the length of  $x$ .

14.

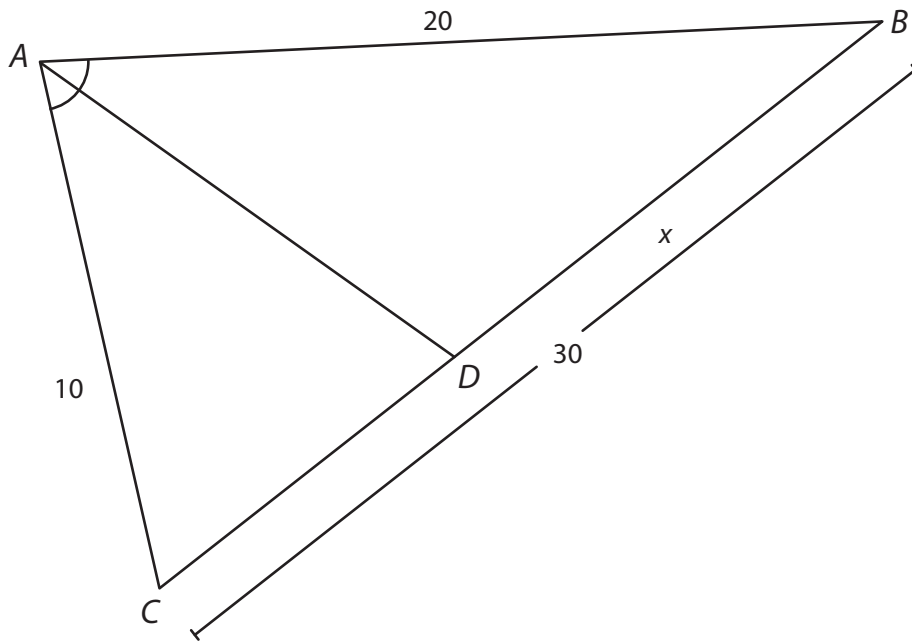
Which statement would justify that  $\triangle ACE \sim \triangle BCD$ ?



- a. Angle-Angle (AA) Similarity Statement
- b. Side-Angle-Side (SAS) Similarity Statement
- c. Side-Side-Side (SSS) Similarity Statement
- d. It is not possible to determine if  $\triangle ACE \sim \triangle BCD$ .

15.

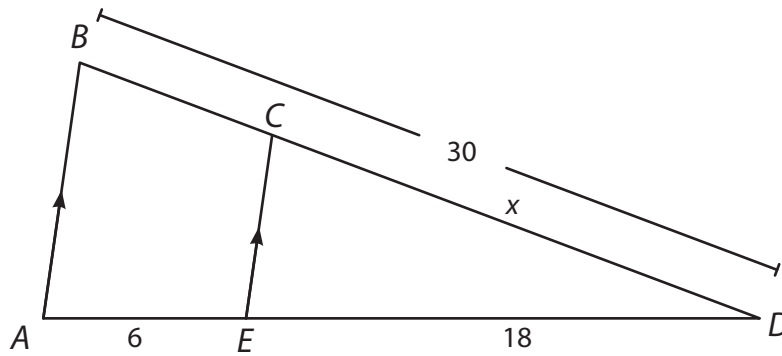
What is the length of  $\overline{BD}$ ?



- a. 5 units
- b. 10 units
- c. 20 units
- d. There is not enough information to determine the length of  $\overline{BD}$ .

16.

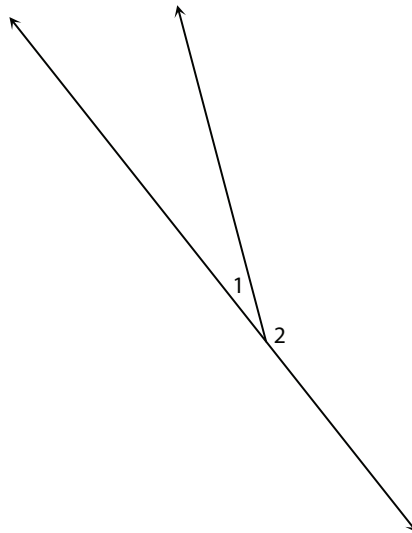
$\triangle ABD \sim \triangle ECD$ . What is the length of  $\overline{CD}$ ?



- a. 90 units
- b. 7.5 units
- c. 22.5 units
- d. There is not enough information to determine the length of  $\overline{CD}$ .

17.

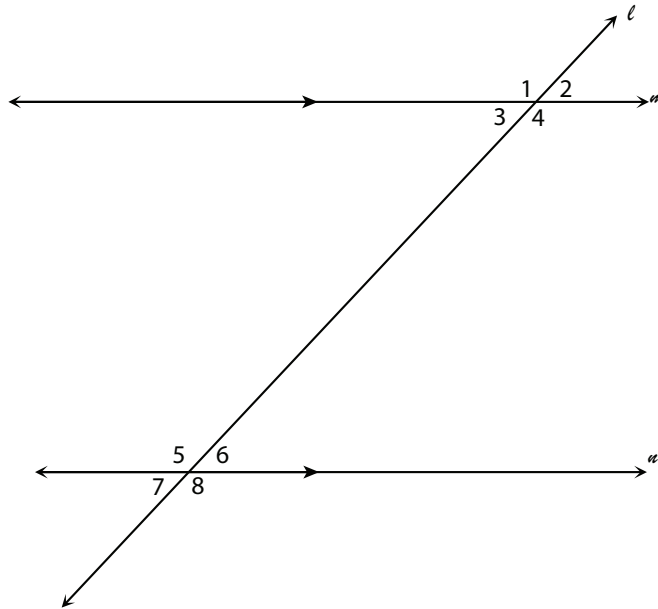
In the diagram below,  $\angle 1$  and  $\angle 2$  are a linear pair. Find  $m\angle 1$  if  $m\angle 1 = 2x - 9$  and  $m\angle 2 = 10x + 9$ .



- a.  $17^\circ$
- b.  $159^\circ$
- c.  $163^\circ$
- d.  $21^\circ$

18.

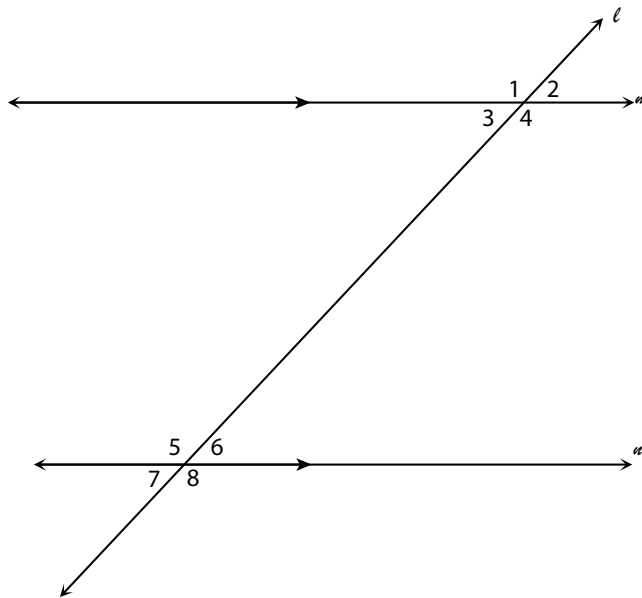
In the diagram below,  $\ell$  is the transversal of the parallel lines  $m$  and  $n$ . Find  $m\angle 3$  if  $m\angle 4 = 5(x+11)$  and  $m\angle 5 = 11x - 17$ .



- a.  $115^\circ$
- b.  $65^\circ$
- c.  $78^\circ$
- d.  $12^\circ$

19.

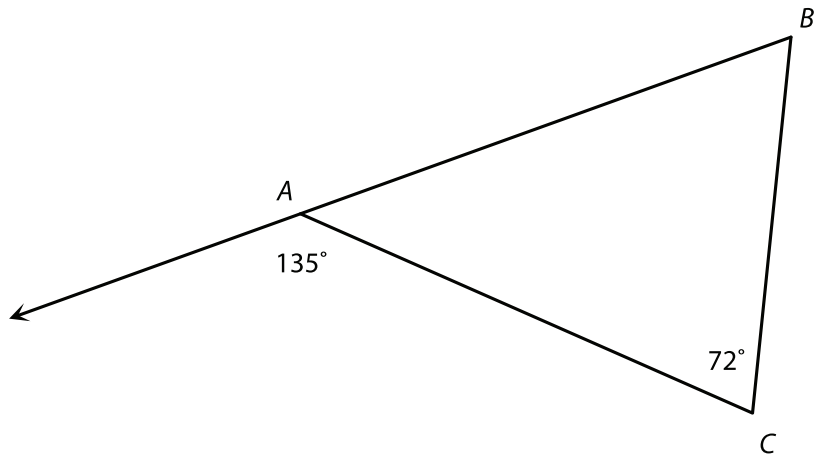
In the diagram below,  $\ell$  is the transversal of the parallel lines  $m$  and  $n$ . Find  $m\angle 5$  if  $m\angle 3 = 2(3x - 4)$  and  $m\angle 5 = 5(3x + 4)$ .



- a.  $8^\circ$
- b.  $172^\circ$
- c.  $40^\circ$
- d.  $140^\circ$

20.

What is the measure of  $\angle B$ ?



a.  $45^\circ$

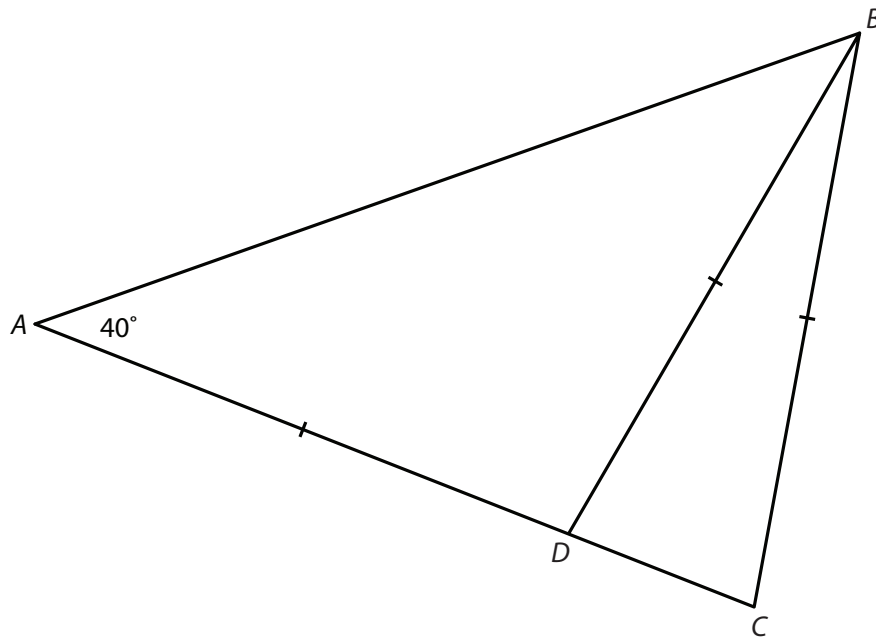
c.  $108^\circ$

b.  $63^\circ$

d.  $117^\circ$

21.

What is the measure of  $\angle C$ ?



a.  $20^\circ$

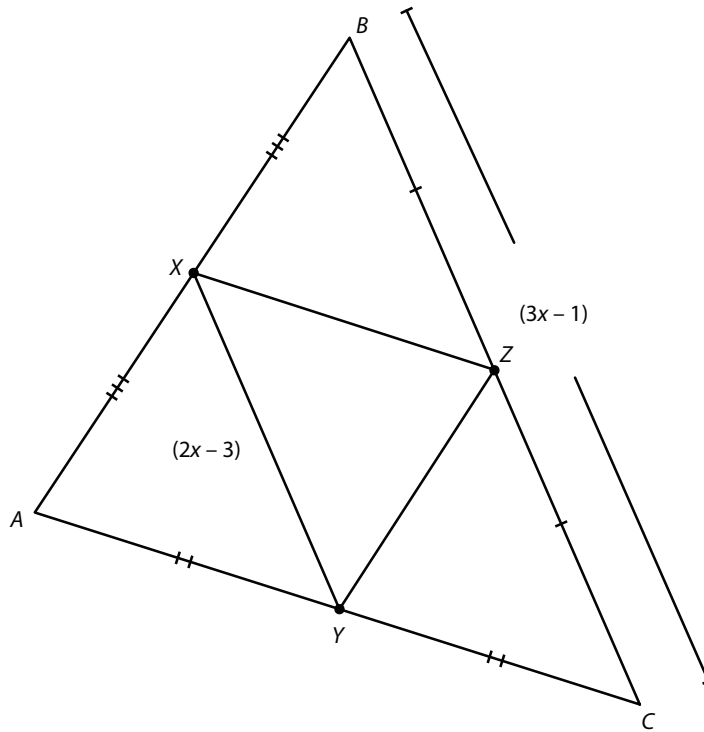
c.  $80^\circ$

b.  $40^\circ$

d.  $100^\circ$



22. If  $BC = 3x - 1$  and  $XY = 2x - 3$ , what is the length of  $XY$ ?



- a. 5 units  
b. 7 units  
c. 14 units  
d. 28 units
23. Determine whether these four vertices form a parallelogram:  $A(-3, 0)$ ,  $B(6, 0)$ ,  $C(1, 1)$ ,  $D(-2, -2)$ .
- a. No, because both pairs of opposite sides are not parallel.  
b. Yes, because both pairs of opposite sides are parallel.  
c. No, because the diagonals bisect each other.  
d. Yes, because the diagonals bisect each other.
24. Classify a quadrilateral as precisely as possible given four vertices:  $P(-6, -3)$ ,  $Q(-3, -7)$ ,  $R(-7, -10)$ ,  $S(-10, -6)$ .
- a. square  
b. rhombus  
c. trapezoid  
d. kite
25. What is always true about rhombuses?
- a. The diagonals are not congruent.  
b. Two pairs of adjacent distinct sides are congruent.  
c. The diagonals intersect at right angles.  
d. Every angle measures  $90^\circ$ .