

Gillespie

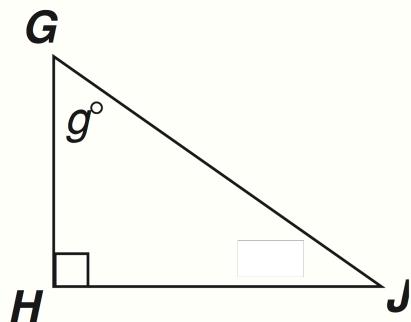
Course 3: Ch2 Test

Similarity and Dilations

Directions: When working each of the following questions, be sure to show all work.

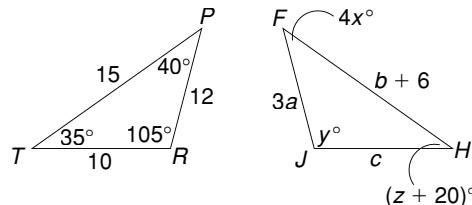
1) If $m\angle J = 23$, what is the value of g° ?

- a) 55
- b) 63
- c) 67
- d) 81



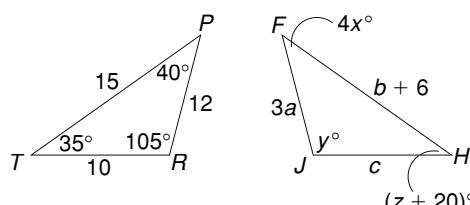
2) Triangle $PRT \cong FJH$. Find y°

- a) 35
- b) 40
- c) 101
- d) 105



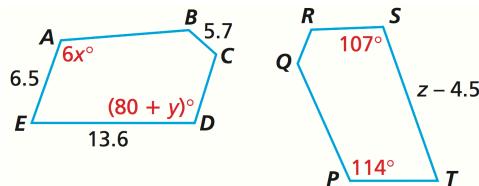
3) Triangle $PRT \cong FJH$. Find b

- a) 7
- b) 8
- c) 9
- d) 10



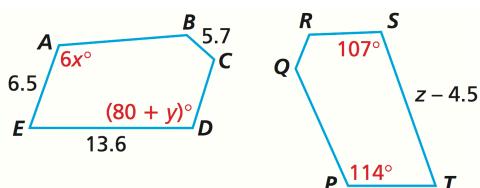
4) Pentagon $ABCDE \cong PQRST$. Find x

- a) 17
- b) 18
- c) 19
- d) 20



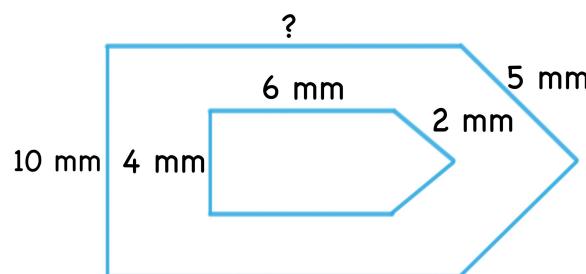
5) Pentagon $ABCDE \cong PQRST$. Find y

- a) 19
- b) 27
- c) 24
- d) 35



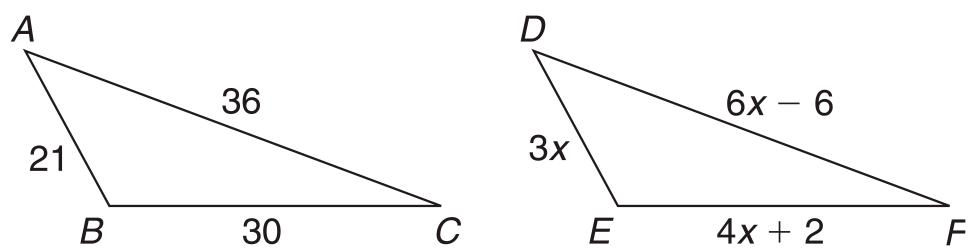
6) Determine the missing side measures if the polygons are similar.

- a) 12 mm
- b) 13 mm
- c) 14 mm
- d) 15 mm



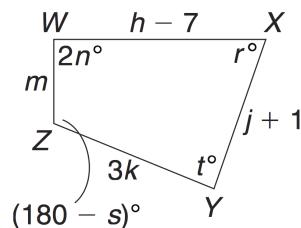
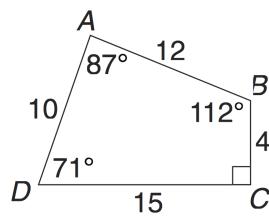
7) $ABC \cong DEF$. What is the value of x ?

- a) 7
- b) 14
- c) 28
- d) 42



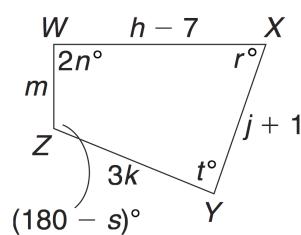
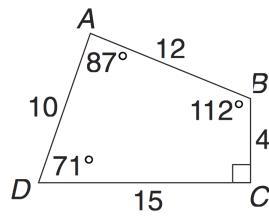
8) $ABCD \cong YZWX$. What is the value of j ?

- a) $j = 14$
- b) $j = 7$
- c) $j = 8$
- d) $j = 9$



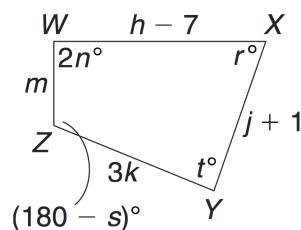
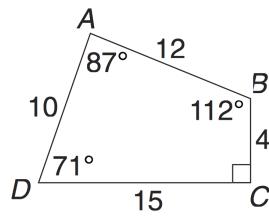
9) $ABCD \cong YZWX$. What is the value of k ?

- a) $k = 3$
- b) $k = 4$
- c) $k = 5$
- d) $k = 9$



10) $ABCD \cong YZWX$. What is the value of n° ?

- a) $n = 45$
- b) $n = 56$
- c) $n = 87$
- d) $n = 90$



11) A road sign casts a shadow that is 4 feet long. At the same time, a $3\frac{1}{2}$ foot child standing next to the sign casts a shadow that is 2.8 feet long. How tall is the sign?

(hint: draw a model)

- a) 3 ft
- b) 4.4 ft
- c) 5 ft
- d) 10 ft

12) A 80-foot tall building casts a shadow that is 15 feet long. At the same time, a man standing next to the building casts a shadow that is 1.5 feet long. How tall is the man?

(hint: draw a model)

- a) 5 ft
- b) 5.5 ft
- c) 6.5 ft
- d) 8 ft

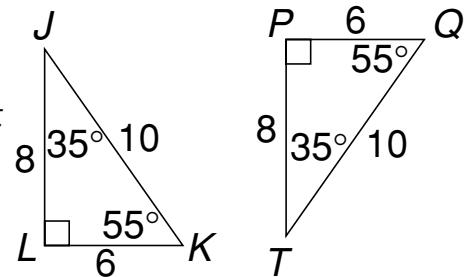
13) The length of a rectangle is 10 centimeters and the width is 3.5 centimeters. A similar rectangle has a width of 17.5 centimeters. What is the length of the second rectangle?

(hint: draw a model)

- a) 50 cm
- b) 132 cm
- c) 135 cm
- d) 560 cm

14) Determine whether the triangles are similar by angle-angle similarity. If so, write a similarity statement.

- a) Yes; at least two angles are congruent
- b) No; at least two angles need to be congruent
- c) No; all three angles are congruent
- d) No; angle – angle similarity is fake



15) A 6 foot-tall street sign casts a shadow that is 8 feet long. At the same time, a 5-foot-tall woman standing on a 2.5-foot-tall podium next to the street sign casts a shadow. How long is the woman's shadow?

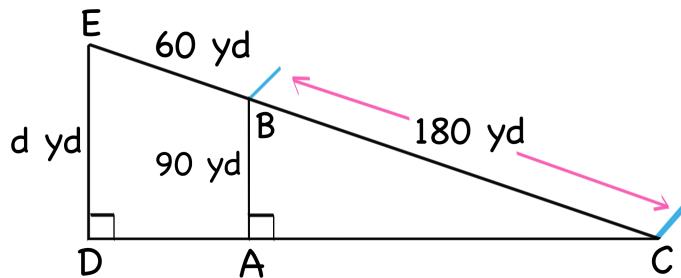
(hint: draw a model)

- a) 10 ft
- b) 15 ft
- c) 17.5 ft
- d) 20 ft

16) Triangle ABC is similar to triangle DEC. Determine the distance from point D to point E

(hint: separate the images)

- a) 30 yd
- b) 60 yd
- c) 90 yd
- d) 120 yd



17) Two rectangles are similar. The length and width of the first rectangle is 6 meters by 4 meters. The second rectangle is similar by a scale factor 3. What is the area of the second rectangle?

(hint: draw a model)

- a) 396 m^2
- b) 216 m^2
- c) 144 m^2
- d) 60 m^2

18) A projector transforms a movie on a television screen so that it is dilated by a scale factor of $\frac{9}{2}$. The original image on the television is 4 inches wide. Find the new width after it is projected on the wall.

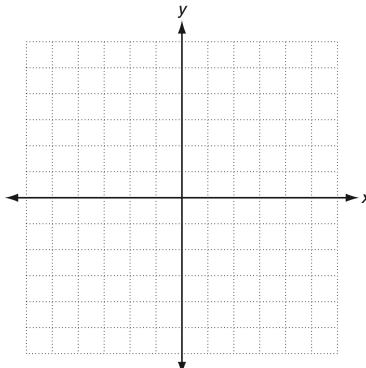
(hint: draw a model)

- a) 18 inches
- b) 27 inches
- c) 54 inches
- d) 56 inches

- 19) Triangle DEF has vertices $D(-1, 4)$, $E(2, 6)$, and $F(8, 6)$. The triangle is dilated with a scale factor of $\frac{3}{4}$, and the dilation will be centered at the origin.

Determine the coordinates of the image of point F after the dilation.

- a) $(0, 0)$
- b) $(1.5, 4.5)$
- c) $(3, 6)$
- d) $(6, 4.5)$



- 20) Polygon $ABCD$ has vertices $A(2, 0)$, $B(0, 0)$, $C(2, 3)$, and $D(0, 3)$. Polygon $ABCD$ is dilated using the origin as the center of the dilation. The image is polygon $A'B'C'D'$, and C' has coordinates $(7, 10.5)$. What scale factor was used to dilate the polygon?

- a) $\frac{1}{4}$
- b) $\frac{1}{2}$
- c) $3\frac{1}{2}$
- d) $4\frac{1}{2}$

