

Gillespie

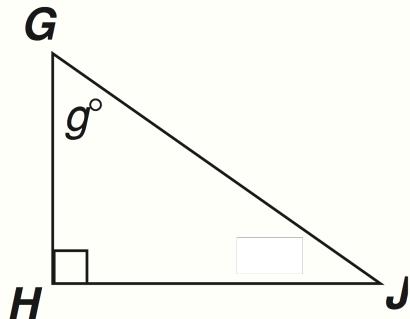
Course 3: Ch2 Test Review Key

Similarity and Dilations

Directions: When working each of the following questions, be sure to show all work. Be sure to round any decimals to the nearest hundredth.

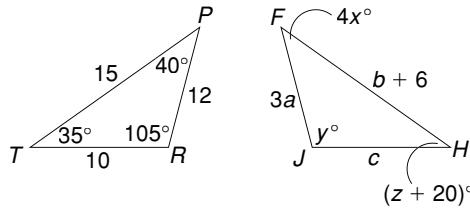
1) If $m\angle J = 35$, what is the value of g° ?

- a) 39
- b) 55
- c) 59
- d) 61



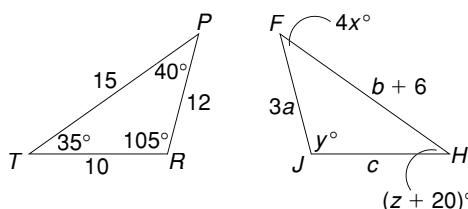
2) Triangle $PRT \cong FJH$. Find a

- a) 3
- b) 4
- c) 5
- d) 6



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

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



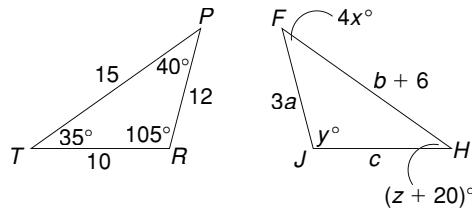
4) Triangle $PRT \cong FJH$. Find x

a) 10

b) 11

c) 15

d) 20



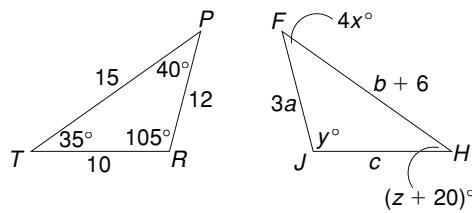
5) Triangle $PRT \cong FJH$. Find y

a) 35

b) 40

c) 105

d) *undefined*



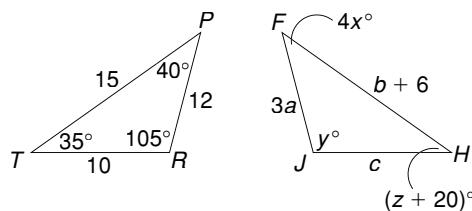
6) Triangle $PRT \cong FJH$. Find z

a) 10

b) 15

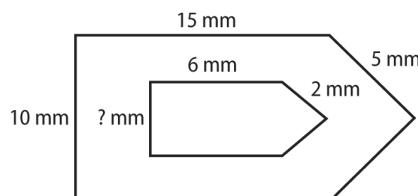
c) 20

d) 35



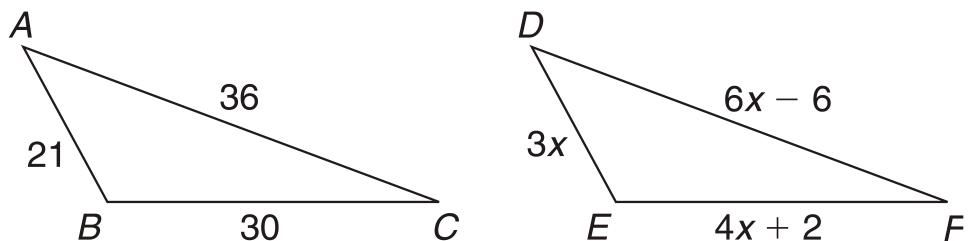
7) Determine the missing side measures if the polygons are similar.

- a) 2 mm
- b) 3 mm
- c) 4 mm
- d) 5 mm



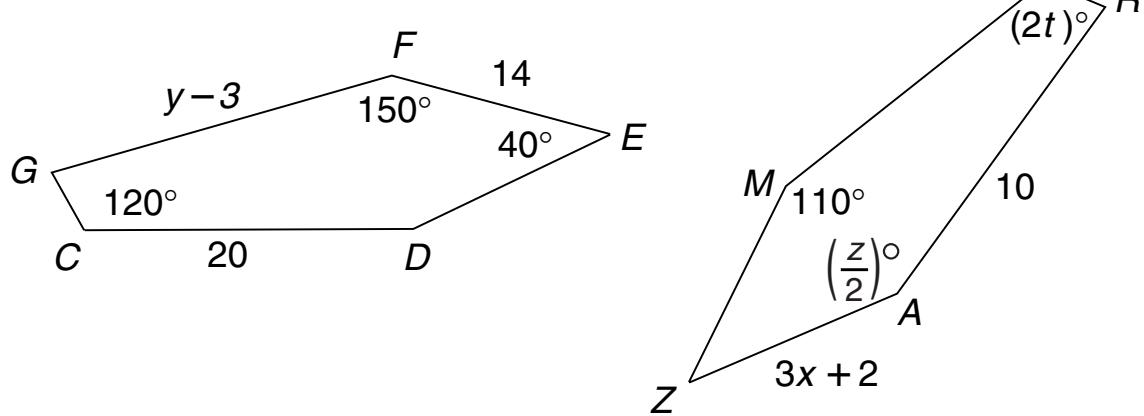
8) $ABC \cong DEF$. What is the value of x ?

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



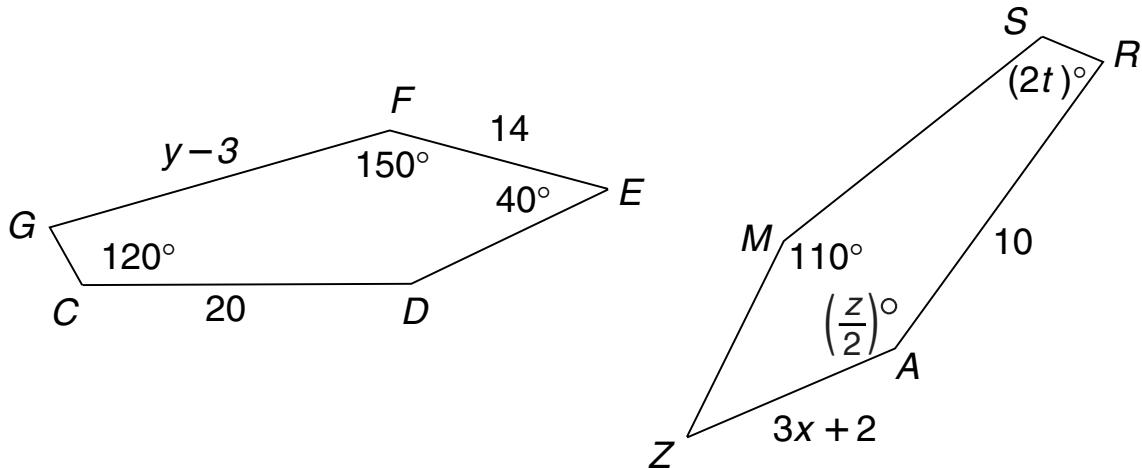
9) $GFEDC \cong RAZMS$. What is the value of z ?

- a) $z = 60$
- b) $z = 75$
- c) $z = 150$
- d) $z = 300$



10) $GFEDC \cong RAZMS$. What is the value of y ?

- a) $y = 10$
- b) $y = 3$
- c) $y = 13$
- d) $y = 7$



11) A road sign casts a shadow that is 4 feet long. At the same time, a 6-foot man standing next to the sign casts a shadow that is 2.4 feet long. How tall is the sign?

(hint: draw a model)

- a) 3 ft
- b) 4.4 ft
- c) 6 ft
- d) 10 ft

12) A 60-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)

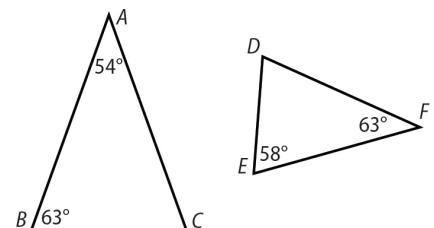
- a) 5 ft
- b) 5.5 ft
- c) 6 ft
- d) 6.5 ft

13) The length of a rectangle is 14 centimeters and the width is 2.5 centimeters. A similar rectangle has a width of 10 centimeters. What is the **perimeter** of the second rectangle?

- a) 56 cm
- b) 132 cm
- c) 560 cm
- d) undefined

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

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



15) A telephone pole casts a shadow that is 20 feet long. At the same time, a 5-foot-tall woman standing on a 1.5-foot-tall podium next to the telephone pole casts a shadow that is 13 feet long. How tall is the telephone pole?

(hint: redraw the model)

- a) 10 ft
- b) 11 ft
- c) 13 ft
- d) 73 ft

16) A 6 foot-tall street sign casts a shadow that is 16 feet long. At the same time, a 5.5-foot-tall woman standing on a 2-foot-tall podium next to the street sign casts a shadow. How long is the woman's shadow?

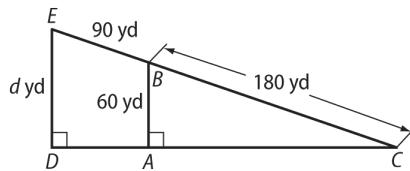
(hint: redraw the model)

- a) 14 ft
- b) 15 ft
- c) 17.5 ft
- d) 20 ft

17) 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



18) Two rectangles are similar. The length and width of the first rectangle is 11 meters by 9 meters. The second rectangle is similar by a scale factor 2. What is the area of the second rectangle?

- a) 396 m^2
- b) 198 m^2
- c) 99 m^2
- d) 40 m^2

19) 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 6 inches wide. Find the new width after it is projected on the wall.

- a) 27 inches
- b) 54 inches
- c) 56 inches
- d) $undefined$

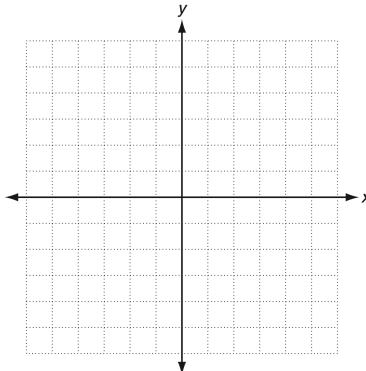
20) A fashion designer draws a dress with a sash measuring 0.5-inch by 4-inch. The actual sash measures 7 inches by a inches. Find the scale factor the designer used and the value of a .

- a) $a = 14 \text{ inches}$
- b) $a = 28 \text{ inches}$
- c) $a = 56 \text{ inches}$
- d) $undefined$

- 21) Triangle DEF has vertices $D(-1, 4)$, $E(2, 6)$, and $F(8, 3)$. 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 E after the dilation.

- a) $(0, 0)$
- b) $(1.5, 4.5)$
- c) $(3, 6)$
- d) $(6, 12)$



- 22) 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 A' has coordinates $(12, 0)$. What scale factor was used to dilate the polygon?

- a) $\frac{1}{2}$
- b) 2
- c) 6
- d) 12

