Similar Figures Worksheet   Name _____
Show All Work Where Necessary!

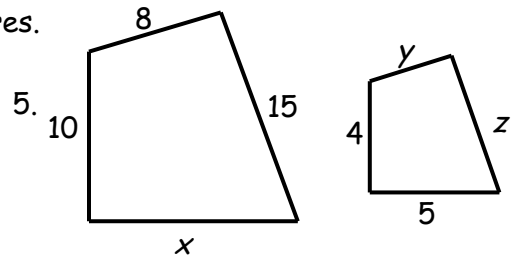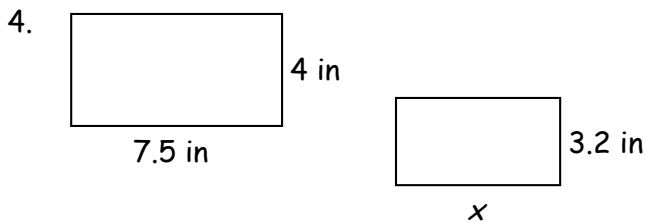You can use proportional relationships to find missing side lengths in similar figures

Solve each proportion.

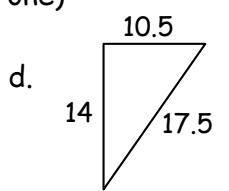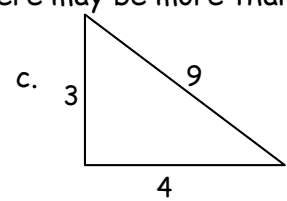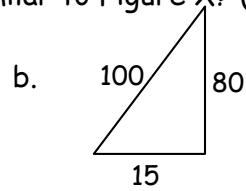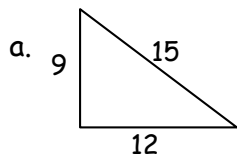1. $\dfrac{3}{8} = \dfrac{x}{24}$
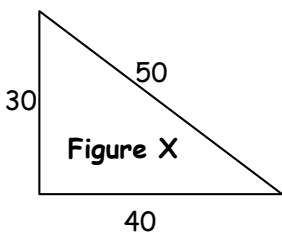
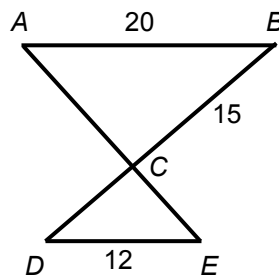2. $\dfrac{5}{7} = \dfrac{25}{y}$

3. $\dfrac{5}{t} = \dfrac{t}{45}$

Find the indicated length for each pair of similar figures.

4.

4 in

7.5 in

3.2 in

x

5.

8

10

15

x

y

4

z

5

6. Which of the following figures are similar to Figure X? (there may be more than one)

50

30

Figure X

40

a. 9   15

12

b. 100   80

15

c. 3   9

4

d. 10.5

14   17.5

7. In the diagram below, $\overline{AB}$ is parallel to $\overline{DE}$. $AB = 20$ inches, $DE = 12$ inches, and $BC = 15$ inches.
What is the length of $\overline{DC}$?

A   20   B

15

C

D   12   E

A. 25 in.   C. 7 in.
B. 9 in.   D. 90 in.

8. A rectangle has a length of 4 feet and a perimeter of 14 feet. What is the perimeter of a
similar rectangle with a width of 9 feet?

A. 36 ft   C. 42 ft
B. 108 ft   D. 126 ft

9. Brandon wants to reduce a figure that is 9 inches tall and 16 inches wide so that it will fit on a 9-inch-by-12-inch piece of paper. If he reduces the figure proportionally, what is the maximum size the reduced figure could measure?

A. 12 inches by $21\frac{1}{3}$ inches

B. 9 inches by 12 inches

C. $5\frac{1}{16}$ inches by 9 inches

D. $6\frac{3}{4}$ inches by 12 inches

10. The sail shown below has a horizontal stripe parallel to the base of the sail. What is the distance, x, from the bottom of the sail to the stripe?
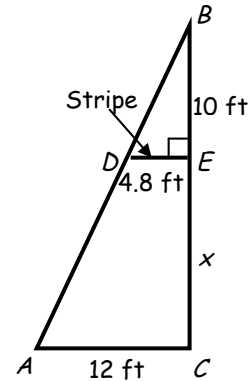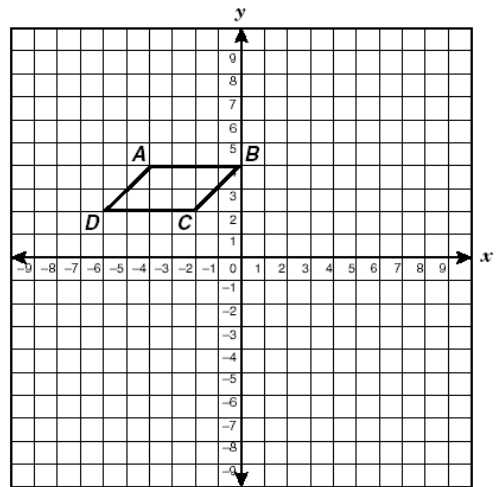
A. 25 feet

B. 15 feet

C. 5.8 feet

D. 4 feet
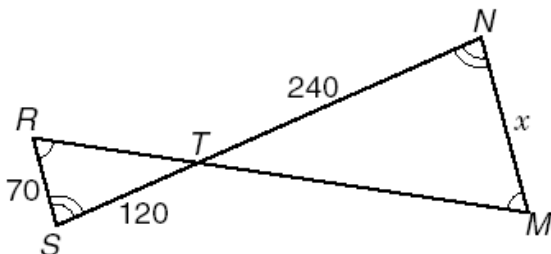
11. The graph of parallelogram *ABCD* is shown below.

Which set of coordinates identifies the vertices of a parallelogram that is similar to *ABCD*?
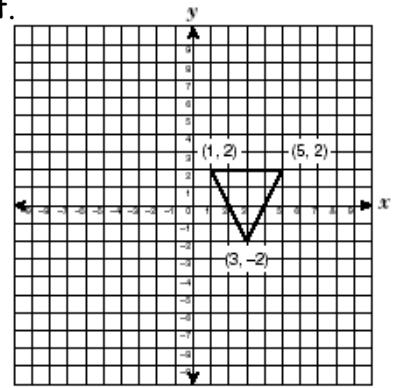
A. (0, 2), (2, 2), (1, 1), (–1, 1)

B. (–2, 2), (0, 2), (1, 0), (–1, 0)

C. (–8, 8), (–3, 8), (–5, 4), (–10, 4)

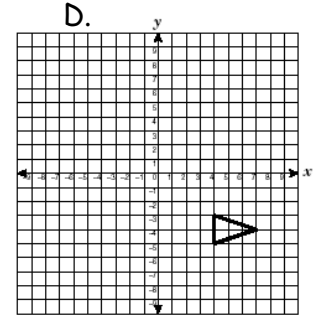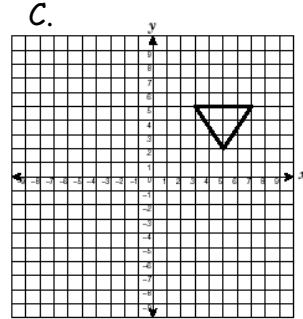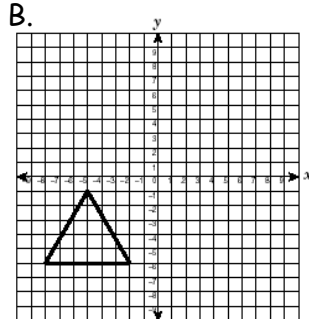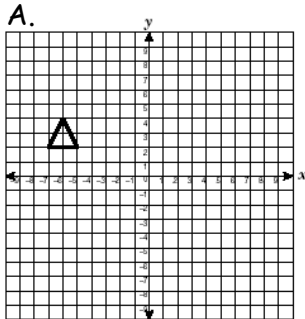D. (–3, 1), (1, 1), (–1, 5), (–5, 5)

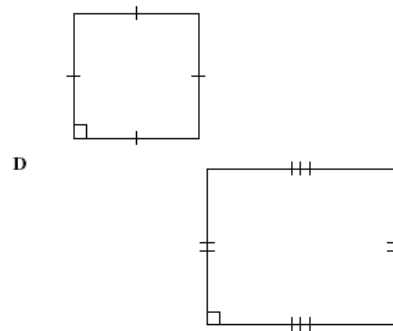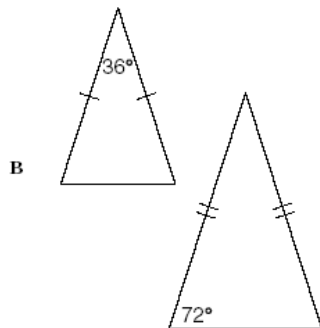12. If triangle TSR is similar to triangle TNM , what is the length of *x*?
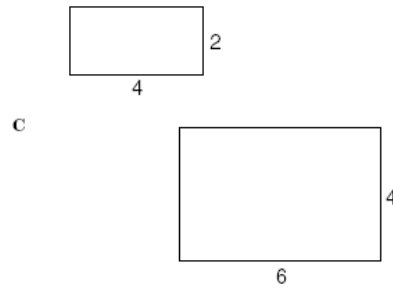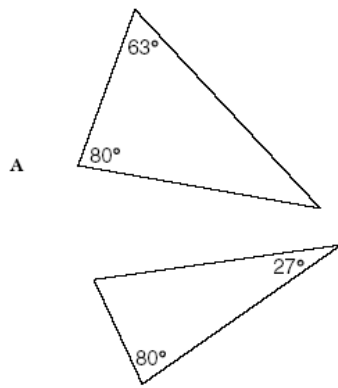
13. A triangle with vertices (1, 2), (5, 2), and (3, –2) is shown to the right.

Which triangle below is similar to the figure above?
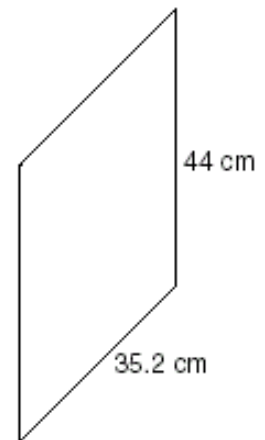
A.

B.

C.

D.

14. Use the information in each diagram to determine which pairs of polygons are similar.

15. A certain parallelogram has the dimensions shown.
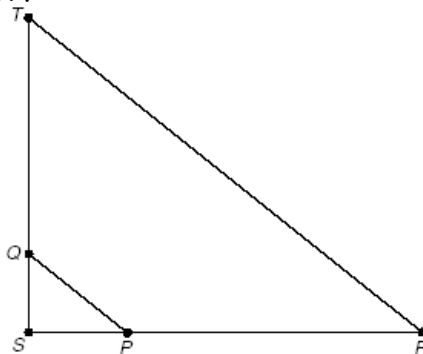   Which set of dimensions would produce a similar figure?

    A.   17.6 cm, 88 cm   **B.**   70.4 cm, 176 cm

    C.   105.6 cm, 132 cm   **D.**   140.8 cm, 220 cm

44 cm

35.2 cm

16. In triangle STR , $\overline{QP}$ and $\overline{TR}$ are parallel.

    If SQ = 6 units, QT = 24 units, and the perimeter of triangle SQP is 20 units, what is the perimeter of triangle STR ?

    A   80 units

    B   100 units

    C   320 units

    D   500 units

17. To estimate the height of her school's gym, Nicole sights the top of the gym wall in a mirror that she has placed on the ground. The mirror is 3.6 meters from the base of the gym wall. Nicole is standing 0.5 meter from the mirror, and her height is about 1.8 meters. What is the height of the gym wall?

Gym

Mirror

1.8 m

3.6 m

0.5 m