

Solve the proportion.

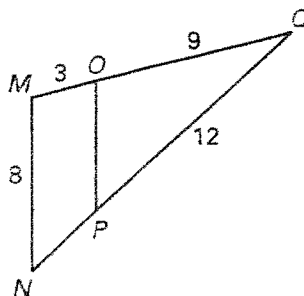
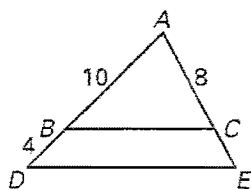
$$1. \frac{x}{4} = \frac{8}{2} \quad 2. \frac{25}{y} = \frac{5}{15} \quad 3. \frac{3}{7} = \frac{6}{z} \quad 4. \frac{5}{3x-2} = \frac{10}{x}$$

Complete the sentence.

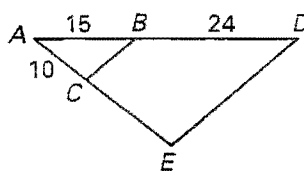
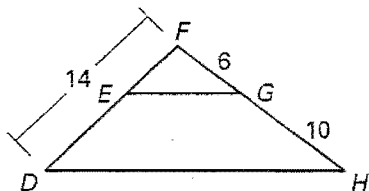
$$5. \text{ If } \frac{7}{2} = \frac{a}{b}, \text{ then } \frac{7}{a} = \frac{?}{b}. \quad 6. \text{ If } \frac{9}{n} = \frac{4}{m}, \text{ then } \frac{9+n}{n} = \frac{?}{m}.$$

In Exercises 7–10, use the diagram and the given information to find the unknown length.

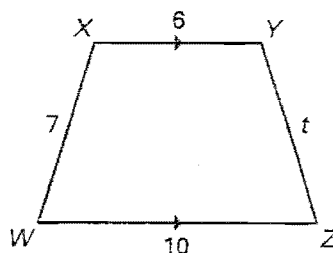
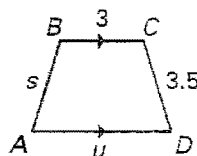
$$7. \text{ Given } \frac{AB}{BD} = \frac{AC}{CE}, \text{ find } CE. \quad 8. \text{ Given } \frac{MO}{OQ} = \frac{NP}{PQ}, \text{ find } NP.$$



$$9. \text{ Given } \frac{EF}{DF} = \frac{FG}{FH}, \text{ find } EF. \quad 10. \text{ Given } \frac{AC}{AE} = \frac{AB}{AD}, \text{ find } CE.$$

In Exercises 11–15,  $ABCD \sim WXYZ$ .

11. Find the scale factor of  $ABCD$  to  $WXYZ$ .
12. Find the scale factor of  $WXYZ$  to  $ABCD$ .
13. Find the values of  $s$ ,  $t$ , and  $u$ .
14. Find the perimeter of each polygon.
15. Find the ratio of the perimeter of  $ABCD$  to the perimeter of  $WXYZ$ .



16. The area of a rectangle is 125 sq. ft. The ratio of the length to the width is 1:5. Find the length and the width.

17. Find the geometric mean of 6 and 12.

18. The geometric mean of 9 and  $x$  is 15. Find  $x$ .

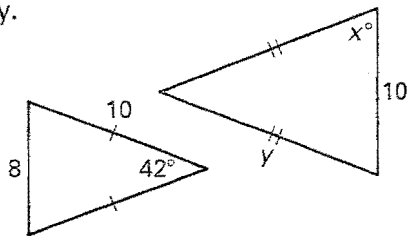
19. You bought a toy model of a sailboat for your little brother. The scale factor of the actual sailboat to the toy model is 25: 1.

If the length of the sailboat is 40 ft. then find the length of the toy model.

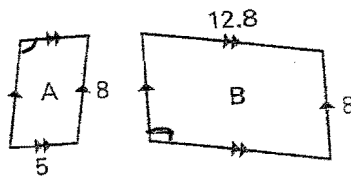
20. The ratio of one side of  $\triangle ABC$  to the corresponding side of similar  $\triangle DEF$  is 3:4. The perimeter of  $\triangle ABC$  is 42 cm. What is the perimeter of  $\triangle DEF$ ?

Find the value of  $x$  and  $y$ .

21.



22. Decide whether the polygons are similar.



24. Given quadrilateral NICE  $\sim$  quadrilateral HOPE write the statement of proportionality.