

/16 Miscellaneous

- The perimeter of a triangle is 84 units. The sides have lengths r , s and t . The ratio of s to r is 5:3 and the ratio of t to r is 2:1. Find the length of each side.
- $\triangle ABC \sim \triangle XYZ$ with a scale factor of $\frac{1}{2}$. If the lengths of $\triangle ABC$ are 6,8,10, what are the lengths of $\triangle XYZ$? What is the perimeter of $\triangle XYZ$?
- Two similar polygons have perimeters of 164 and 205. The length of one side in a larger polygon is 3 more than the length of the corresponding side in the smaller polygon. Find the length of the side of the smaller polygon.

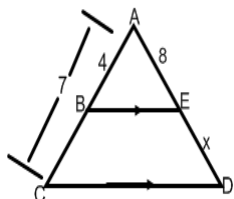
4. Solve for b . $\frac{6}{b+9} = \frac{4}{b+5}$

5. Find the 2nd proportional for the following set of 3 terms: 4, 8, 12

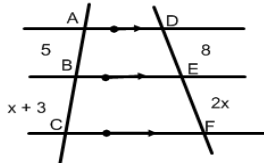
6. The sides of 1 triangle are 8, 14, 12 and the sides of another triangle are 18, 21, 12. These triangles can be proven to be similar by:

7. Two supplementary angles are in the ratio of 3 to 5. Find the measure of the larger angle.

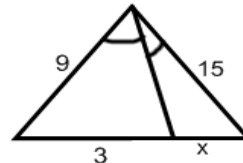
8. Find the value of x .



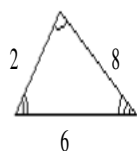
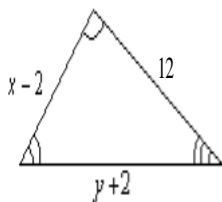
9. Find the value of x .



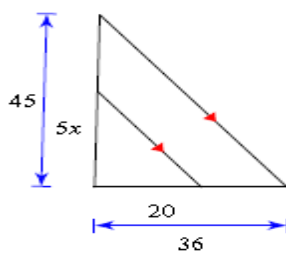
10. Find the value of x .



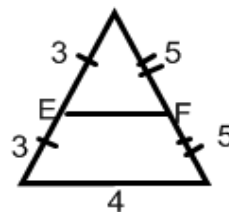
11. Find the values of each variable.



12. Find the value of x .

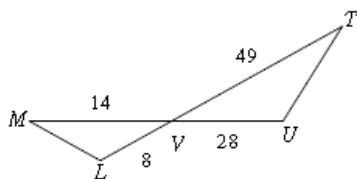


13. Find EF.

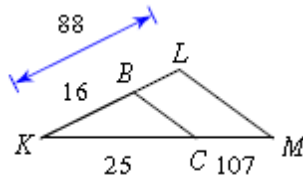


Which pairs of polygons can be proved to be similar? Justify your answer.

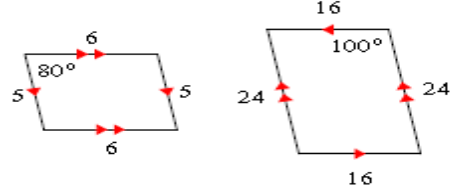
- 14.



- 15.



- 16.



/13 Vocabulary

The following statements are either sometimes or never true. Explain why.

- S N 17. Similar polygons are always congruent.
- S N 18. Two isosceles triangles are similar.
- S N 19. A hexagon and an octagon are similar.
- S N 20. A parallelogram and a trapezoid are similar.
- S N 21. Two rectangles are similar.

22. What is the difference between similar and congruent?

23. What are the 2 requirements for 2 polygons to be similar? (2pts)
 a. _____ b. _____

24. How do you prove that 2 lines are parallel?
 (2pts)
 a. _____
 b. _____

25. What are 3 things you can conclude if a segment is
 mid-segment? (3pts)
 a. _____
 b. _____
 c. _____

 /4 Mid-segment

Vertices of $\triangle ACE$ are: $A(3,1)$, $C(2,3)$ and $E(-4, 1)$. DB is the mid-segment.

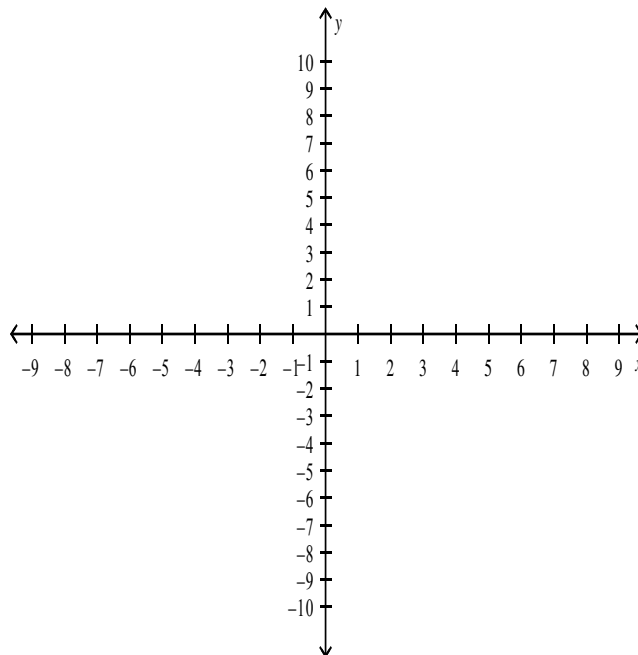
26. Find the coordinates of D and B .

27. Verify that $DB = \frac{1}{2} AE$
 $DB =$

$AE =$

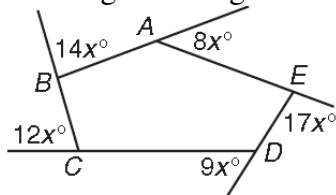
28. Verify that $DB \parallel AE$
 $DB =$

$AE =$



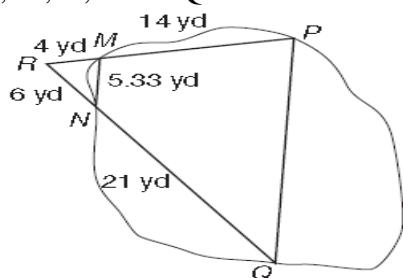
8/8 Real-World Applications

29. A decorative garden in the shape of a pentagon is surrounded by five railings. Find the measure of each exterior angle of the garden.

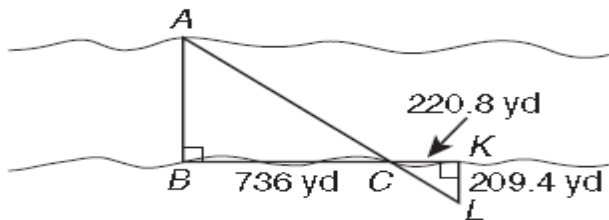


30. Van Gogh's famous painting The Starry Night is 72cm wide and 92cm long. Karen has a print of the painting hanging in her room that is 57.5cm long. What is the width of the print?

31. In order to measure the distance PQ across a lake on her property, a surveyor locates and stakes points R, M, N, P and Q as shown. Find PQ to the nearest yard.



32. A surveyor wants to measure the width of the river. To do so, he locates points A, B, C, K and L as shown. What is AB?



33. Carlos notices a 40ft flagpole casts 24ft shadow. A nearby tree casts a 36ft shadow. How tall is the tree?
34. The scale on a map indicates that one inch equals 4 miles. If two towns are 3.5 inches apart, what is the actual distance between the towns?
35. A study shows that three out of every ten students study for more than two hours every evening. If there are 500 juniors in a high school, how many would you expect to spend more than two hours studying every evening?
36. The actual wing span of Columbia is 78.06ft and its length is 122.2 ft. Suppose a model is to be built with a wing span equal to $\frac{1}{20}$ of the actual size. What should be its length? What can you say about the other dimensions of the model?