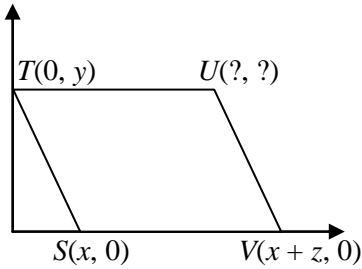
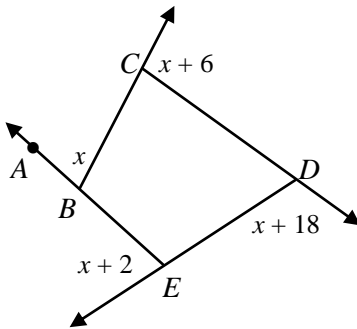


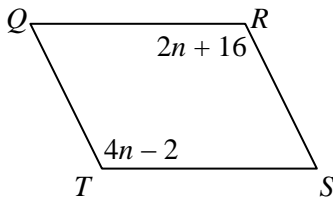
1. If  $STUV$  is a parallelogram, what are the coordinates of point  $U$ ?



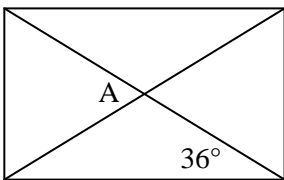
2. Find the measure of  $\angle ABC$ .



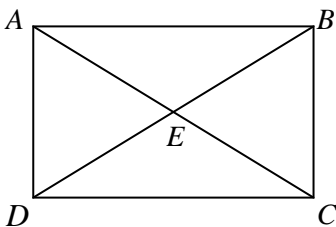
3. What is the measure of  $\angle S$  in parallelogram  $QRST$ ?



4. What is the measure of  $\angle A$  in the rectangle?



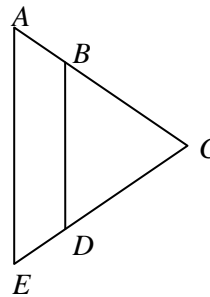
5. In the figure below, if  $ABCD$  is a rectangle, what type of triangle must  $\triangle ABE$  be?



6. If  $QRSTU$  is a regular pentagon, what is the measure of  $\angle T$ ?

7. Three siblings are to share an inheritance of \$125,250 in the ratio of 4:5:6. What is the amount of the greatest share?

8. If  $AE \parallel BD$  write a similarity statement that will prove  $\triangle ACE \sim \triangle BCD$ ?

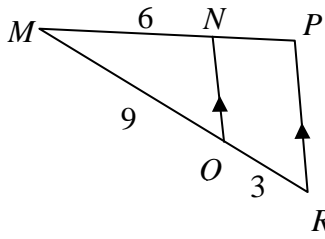


9. Solve the following equation for  $x$ :  $\frac{3}{5} = \frac{x}{y}$ ?

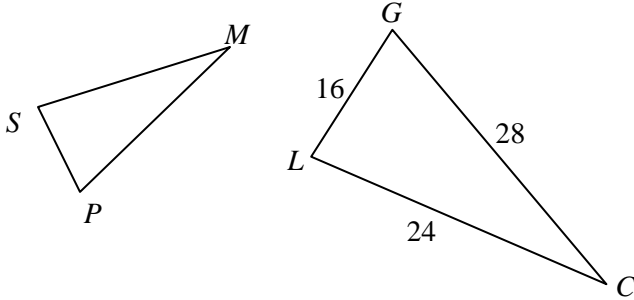
10. A model plane has a wingspan of about 6 inches. The actual airplane has a wingspan of 18 feet and a length of 24 feet. How long is the model?

11. If the area of a triangle is  $42 \text{ ft}^2$ , and it has a similarity ratio of 1:2 with another triangle. What is the area of the other triangle?

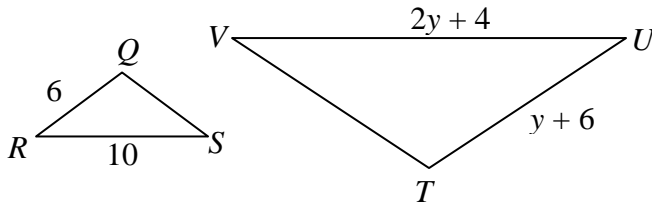
12. Find  $NP$ .



13.  $\triangle CGL \sim \triangle MPS$ . The similarity ratio of  $\triangle CGL$  to  $\triangle MPS$  is  $\frac{3}{4}$ . What is the length of  $\overline{PS}$ ?

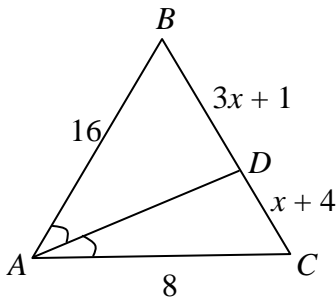


14.  $\triangle QRS \sim \triangle TUV$ . Find the value of  $y$ .

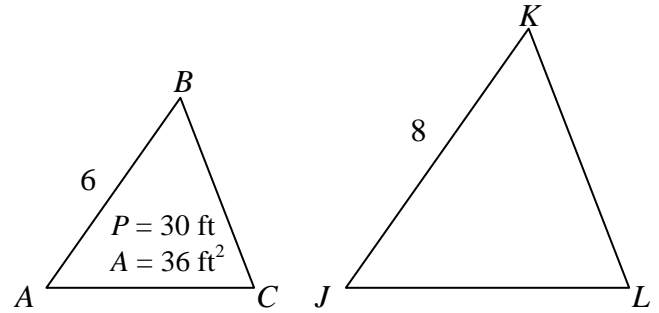


15. The similarity ratio of two similar pentagons is  $\frac{5}{7}$ . What is the ratio of the perimeters of the pentagons?

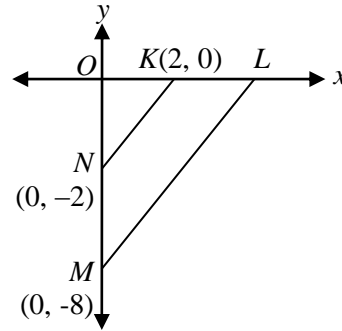
16. Find  $BD$ .



17. Given  $\triangle ABC \sim \triangle JKL$ , find the perimeter and area of  $\triangle JKL$ .



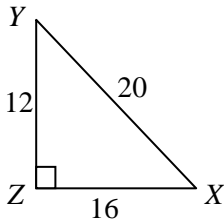
18. Given that  $\triangle KON \sim \triangle LOM$ , find the coordinates of  $L$  and the scale factor.



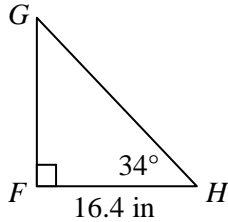
19. A tree is standing next to a 50-foot high building. The tree has an 10-foot shadow, while the building has a 20-foot shadow. How tall is the tree, rounded to the nearest foot?

20. A house is 39 feet wide and 66 feet long. If a sketch is made of the house using the scale 1 cm : 3 ft, what are the dimensions of the sketch?

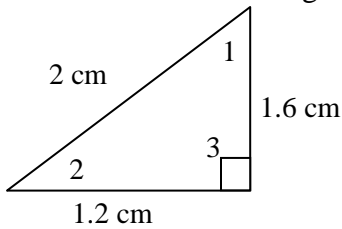
21. Write the trigonometric ratio for  $\cos X$  as a fraction.



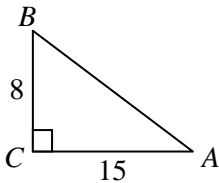
22. Find  $GH$ . Round to the nearest hundredth.



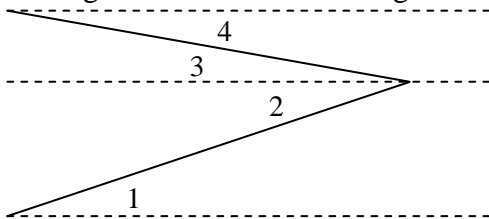
23. Use the trigonometric ratio of  $\sin A = 0.38$  to determine which angle is  $\angle A$ .



24. Find  $\sin A$ . Round to the nearest hundredth.

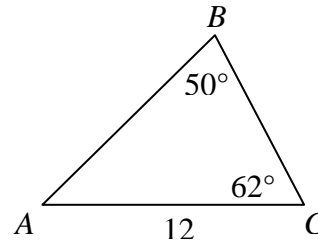


25. Classify each angle in the diagram as an angle of elevation or an angle of depression.

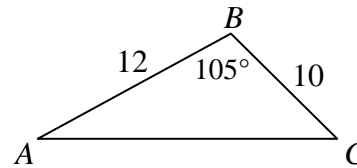


26. An eagle 150 feet in the air spots its prey on the ground. The angle of depression to its prey is  $30^\circ$ . What is the horizontal distance between the eagle and its prey? Round to the nearest foot.

27. Find  $AB$ . Round to the nearest tenth.

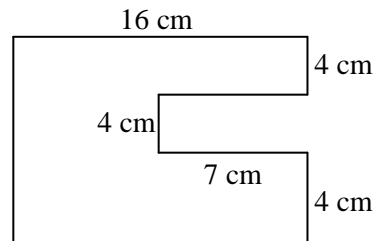


28. Find  $AC$ . Round to the nearest tenth.

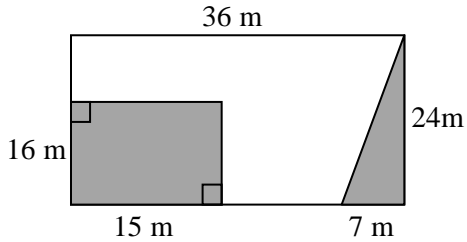


29. Find the area of regular octagon with a radius of 2 cm. Round to the nearest tenth.

30. Find the area of the figure below.

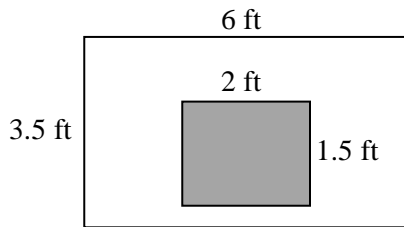


31. Find the area of the **unshaded** part of the rectangle below.

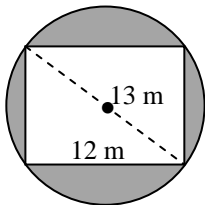


32. A right triangle with base 6 in. and height 8 in. has its base and height doubled. What is the effect on the area of the triangle?

33. Given that both shapes are rectangles, what is the area of the **unshaded** region?



34. Suppose the rectangle is inscribed the circle. Find the area of the shaded region. Round to the nearest tenth.



35. What is the total surface area of a regular pyramid with a square base measuring 7 cm by 7 cm and lateral faces with a slant height measuring 4 cm? Round your answer to the nearest tenth if necessary.

36. What is the total surface area of a cone with a radius of 5 cm and a height 12 cm high?

37. What is the total surface area of a regular cylinder with a radius of 14 cm and height 48 cm high?

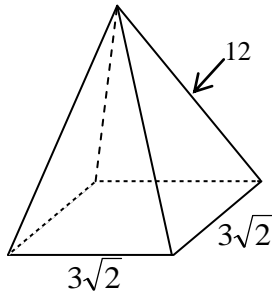
38. Write down the formula for the volume of a cube, and then find the volume of a cube with an edge measuring 2.5 cm?

39. Write down the formula for the surface area of a sphere, and then find the surface area of a sphere with a radius of 8 cm?

40. Write down the formula for the volume of a cylinder, and then determine the volume of a regular cylinder with a diameter of 12 cm and height of 11 cm?

41. Write down the formula for the volume of a cone, and then determine the volume of a cone with a radius of 6 cm and a slant height of 10?

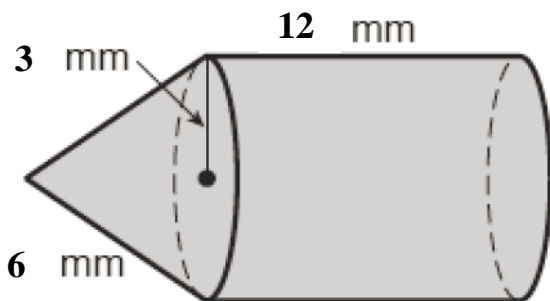
42. What is the volume of a regular pyramid with a square base measuring  $3\sqrt{2}$  cm by  $3\sqrt{2}$  cm and lateral edges measuring 12 cm?



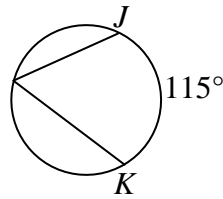
43. What is volume of a sphere with a radius of 4.5 cm?

44. The base of a triangular prism is an equilateral triangle with perimeter of 42 inches. If the height of the prism is 6 inches, find the lateral surface area.

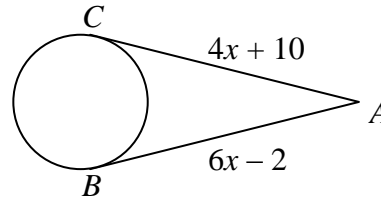
45. Find the total surface area of the composite figure.



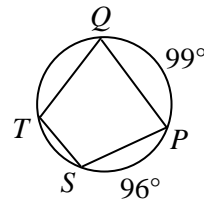
46. Given the circumference of the circle is  $64\pi$  and the measure of arc  $JK$  is  $115^\circ$ , find the length of arc  $JK$ .



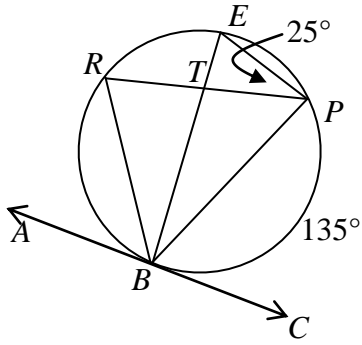
47. Given that  $\overline{AB}$  and  $\overline{AC}$  are tangent to the circle, find  $AB$ .



48. Find  $m\angle P$ .



For Questions 49 - 51 use the diagram below.  
 $\overrightarrow{AB}$  is tangent to the circle and  $\overline{BE}$  is a diameter.

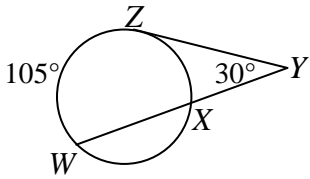


49. Find  $m\angle RBC$ .

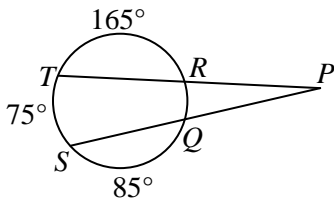
50. Find  $m\angle BTP$ .

51. Find  $m\angle BPE$ .

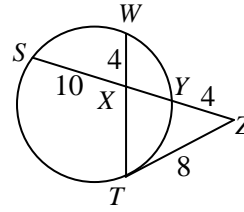
52. Find the measure of arc XZ.



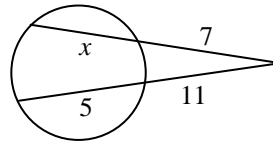
53. Find  $m\angle P$ .



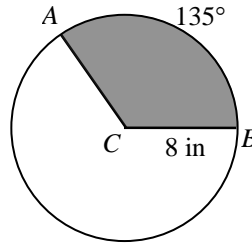
54. Find XT.



55. Solve for  $x$ . Round your answer to the nearest tenth if necessary.



56. Find the area of the sector.



57. Find the center and the length of the radius of the circle.

$$(y - 5)^2 + (x + 3)^2 = 19.$$