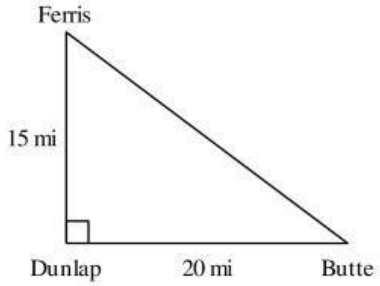
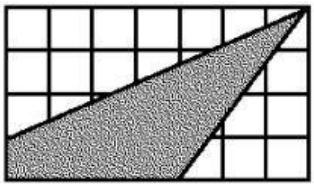



a. 20 mi b. 25 mi c. 10 mi d. 35 mi

____ 28. A triangle has sides of lengths 12, 14, and 19. Is it a right triangle? Explain.

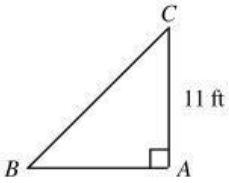
a. yes; $12^2 + 14^2 \neq 19^2$
b. no; $12^2 + 14^2 = 19^2$
c. no; $12^2 + 14^2 \neq 19^2$
d. yes; $12^2 + 14^2 = 19^2$

____ 29. The figure is drawn on centimeter grid paper. Find the perimeter of the shaded figure to the nearest tenth.



a. 17.6 $cm^2$ b. 10.8 $cm^2$ c. 15.6 $cm^2$ d. 18.0 $cm^2$

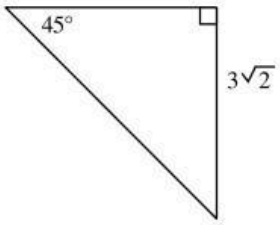
____ 30. In triangle $ABC$, $\angle A$ is a right angle and $m\angle B = 45°$. Find $BC$. If you answer is not an integer, leave it in simplest radical form.




Not drawn to scale

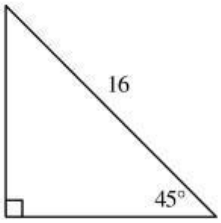
a. 22 ft b. $22\sqrt{2}$ ft c. 11 ft d. $11\sqrt{2}$ ft

____ 31. Find the length of the hypotenuse.




a. 12 b. 6 c. 5 d. 18

____ 32. Find the length of the leg. If your answer is not an integer, leave it in simplest radical form.




Not drawn to scale

a. 128 b. $8\sqrt{2}$ c. 16 d. $2\sqrt{2}$

____ 33. The area of a square garden is 50 $m^2$. How long is the diagonal?

a. 25 m b. 100 m c. $5\sqrt{6}$ m d. 10 m

____ 34. The length of the hypotenuse of a 30°-60°-90° triangle is 4. Find the perimeter.

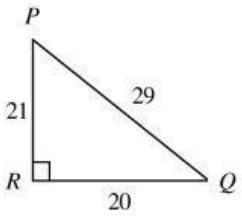
a. $4 + 12\sqrt{3}$ c. $2 + 6\sqrt{3}$

b. $6 + 2\sqrt{3}$ d. $12 + 4\sqrt{3}$

____ 35. A piece of art is in the shape of an equilateral triangle with sides of 7 in. Find the area of the piece of art. Round your answer to the nearest tenth.

a. none of these b. 42.4 $in.^2$ c. 17.3 $in.^2$ d. 21.2 $in.^2$

____ 36. Write the tangent ratios for $\angle P$ and $\angle Q$.



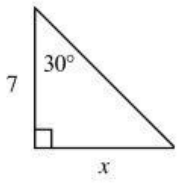

Not drawn to scale

a. $\tan P = \frac{29}{21}$; $\tan Q = \frac{21}{29}$ c. $\tan P = \frac{21}{20}$; $\tan Q = \frac{20}{21}$

b. $\tan P = \frac{20}{21}$; $\tan Q = \frac{21}{20}$ d. $\tan P = \frac{29}{20}$; $\tan Q = \frac{20}{29}$

**Find the value of *x*. Round your answer to the nearest tenth.**

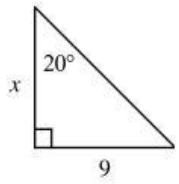
____ 37.




Not drawn to scale

a. 3.5 b. 12.1 c. 6.1 d. 4

____ 38.

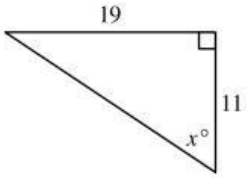



Not drawn to scale

a. 3.3 b. 3.1 c. 24.7 d. 8.5

**Find the value of $x$ to the nearest degree.**

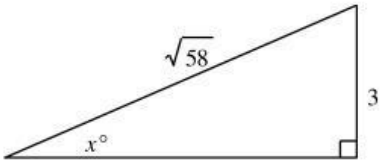
____ 39.




Not drawn to scale

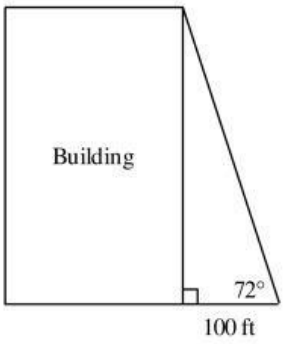
a. 30 b. 60 c. 70 d. 85

____ 40.




a. 67 b. 22 c. 83 d. 53

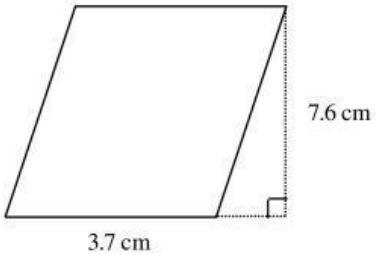
____ 41. The students in Mr. Collin's class used a surveyor's measuring device to find the angle from their location to the top of a building. They also measured their distance from the bottom of the building. The diagram shows the angle measure and the distance. To the nearest foot, find the height of the building.




a. 2400 ft b. 72 ft c. 308 ft d. 33 ft

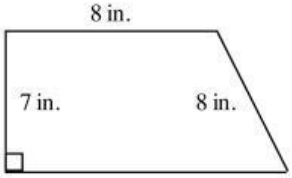
**Find the area. The figure is not drawn to scale.**

____ 42.




a. 28.12 $cm^2$ b. 3.9 $cm^2$ c. 11.3 $cm^2$ d. 56.24 $cm^2$

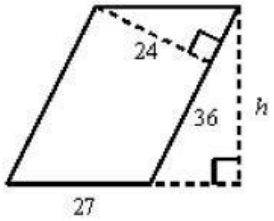
____ 43.




Not drawn to scale

a. 77.2 $in.^2$ b. 80 $in.^2$ c. 75 $in.^2$ d. 70 $in.^2$

____ 44. Find the value of *h* in the parallelogram.

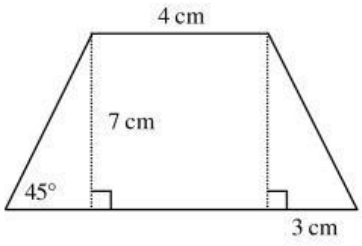



Not drawn to scale

a. 32 b. 28 c. 40.5 d. 35

**Find the area of the trapezoid. Leave your answer in simplest radical form.**

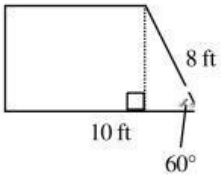
____ 45.




Not drawn to scale

a. 63 $cm^2$ b. 70 $cm^2$ c. 24.5 $cm^2$ d. 9 $cm^2$

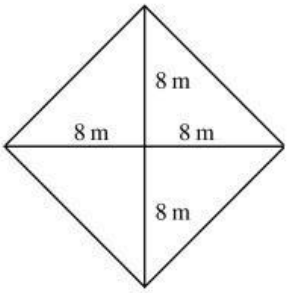
____ 46.




Not drawn to scale

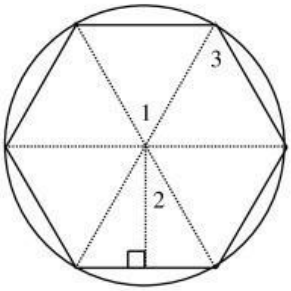
a. $40\sqrt{3}$ ft$^2$ b. $16\sqrt{3}$ ft$^2$ c. $24\sqrt{3}$ ft$^2$ d. $32\sqrt{3}$ ft$^2$

____ 47. Find the area of the rhombus.




a. 12 m$^2$ b. 4096 m$^2$ c. 128 m$^2$ d. 32 m$^2$

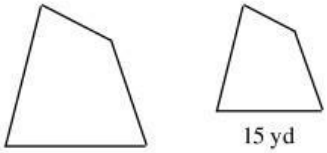
____ 48. Given the regular hexagon, find the measure of each numbered angle.




a. $m\angle 1 = 30, m\angle 2 = 60, m\angle 3 = 30$
b. $m\angle 1 = m\angle 2 = m\angle 3 = 60$
c. $m\angle 1 = 60, m\angle 2 = 30, m\angle 3 = 60$
d. $m\angle 1 = 60, m\angle 2 = 30, m\angle 3 = 30$

**The figures are similar. Give the ratio of the perimeters and the ratio of the areas of the first figure to the second. The figures are not drawn to scale.**

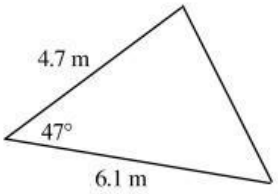
____ 49.




a. $\frac{8}{3}$ and $\frac{10}{5}$ b. $\frac{9}{4}$ and $\frac{64}{9}$ c. $\frac{9}{4}$ and $\frac{10}{5}$ d. $\frac{8}{3}$ and $\frac{64}{9}$

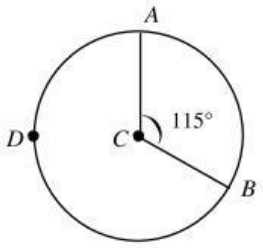
**Find the area of the triangle. Give the answer to the nearest tenth. The drawing may not be to scale.**

____ 50.



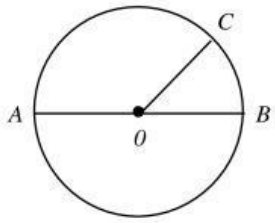

a. 10.5 $m^2$ b. 9.8 $m^2$ c. 19.6 $m^2$ d. 21.0 $m^2$

____ 51. Name the minor arc and find its measure.




a. arc *ADB;* 30° b. arc *AB;* 115° c. arc *ADB*; 245° d. arc *AB;* 245°

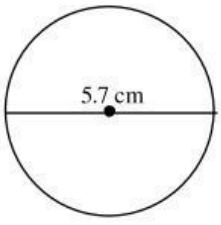
____ 52. Identify a semicircle that contains *C*.




a. semicircle *ABC*
b. semicircle *AC*
c. semicircle *CB*
d. semicircle *ACB*

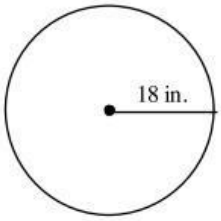
**Find the circumference. Leave your answer in terms of $\pi$.**

____ 53.




a. 11.4$\pi$ cm b. 8.55$\pi$ cm c. 2.85$\pi$ cm d. 5.7$\pi$ cm

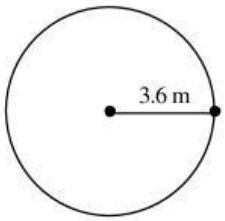
____ 54.




a. $54\pi$ in. b. $36\pi$ in. c. $18\pi$ in. d. $324\pi$ in.

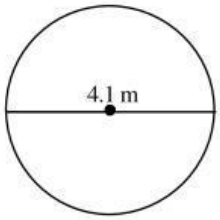
**Find the area of the circle. Leave your answer in terms of $\pi$.**

____ 55.



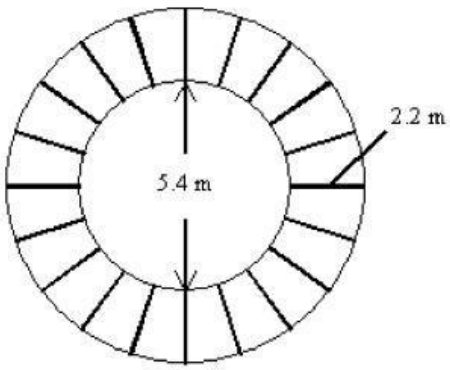

a. $25.92\pi$ m$^2$ b. $1.8\pi$ m$^2$ c. $12.96\pi$ m$^2$ d. $46.66\pi$ m$^2$

____ 56.



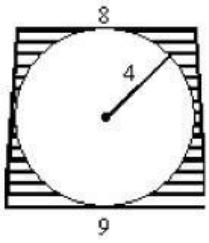

a. $4.2025\pi$ m$^2$ b. $8.405\pi$ m$^2$ c. $16.81\pi$ m$^2$ d. $11.2\pi$ m$^2$

____ 57. The figure represents the overhead view of a deck surrounding a hot tub. What is the area of the deck? Round to the nearest tenth.



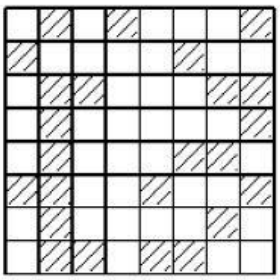

a. 75.4 m$^2$ b. 89.8 m$^2$ c. 278.7 m$^2$ d. 22.9 m$^2$

____ 58. Find the area of the shaded portion of the figure. Dimensions are in feet. Leave your answer in terms of $\pi$.



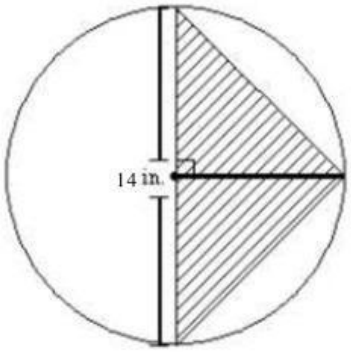

a. $(68 - 8\pi)$ ft$^2$ b. $(72 - 16\pi)$ ft$^2$ c. $(68 - 16\pi)$ ft$^2$ d. none of these

____ 59. What is the probability that a point chosen at random on the grid will lie in the unshaded region?



a. $\frac{5}{8}$ b. $\frac{2}{5}$ c. $\frac{3}{8}$ d. $\frac{3}{5}$

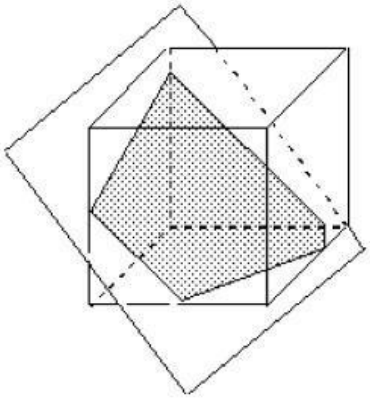
____ 60. Find the probability that a point chosen at random will lie in the shaded area.




a. 0.32 b. 0.62 c. 0.94 d. 0.02

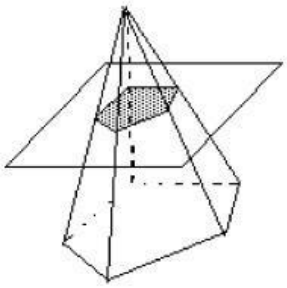
**Describe the cross section.**

___ 61.



a. pentagon b. trapezoid c. hexagon d. cube

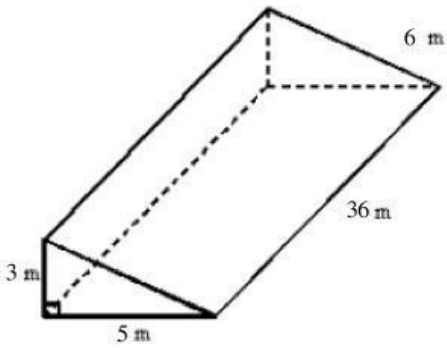
___ 62. Pierre built the model shown in the diagram below for a social studies project. He wants to be able to show the inside of his model, so he sliced the figure as shown. Describe the cross section he created.



a. hexagon b. pentagon c. pyramid d. rectangle

**Use formulas to find the lateral area and surface area of the given prism. Show your answer to the nearest whole number.**

___ 63.

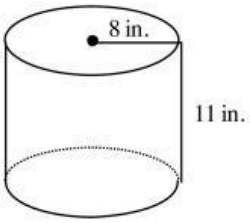



Not drawn to scale

a. 468 $m^2$ ; 519 $m^2$
b. 468 $m^2$ ; 534 $m^2$
c. 504 $m^2$ ; 512 $m^2$
d. 504 $m^2$ ; 519 $m^2$

**Find the surface area of the cylinder in terms of $\pi$.**

____ 64.

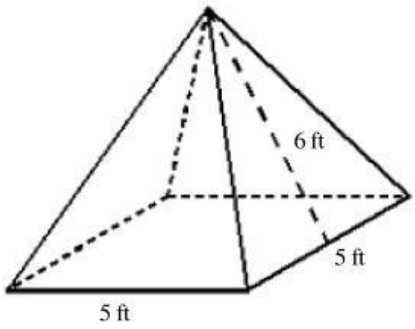



Not drawn to scale

a. 688 in.$^2$ b. $304\pi$ in.$^2$ c. $176\pi$ in.$^2$ d. $208\pi$ in.$^2$

**Find the surface area of the pyramid shown to the nearest whole number.**

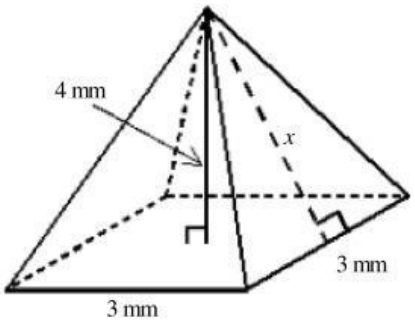
____ 65.




Not drawn to scale

a. 85 ft$^2$ b. 145 ft$^2$ c. 60 ft$^2$ d. 25 ft$^2$

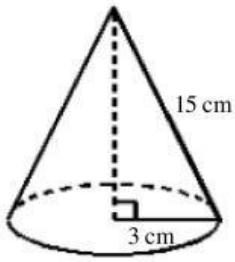
____ 66. Find the slant height $x$ of the pyramid shown to the nearest tenth.




Not drawn to scale

a. 2.4 mm b. 5 mm c. 2.6 mm d. 4.3 mm

____ 67. Find the surface area of the cone in terms of $\pi$.

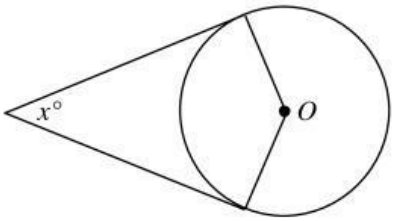



Not drawn to scale

a. $54\pi$ cm$^2$ b. $99\pi$ cm$^2$ c. $51\pi$ cm$^2$ d. 49.5 cm$^2$

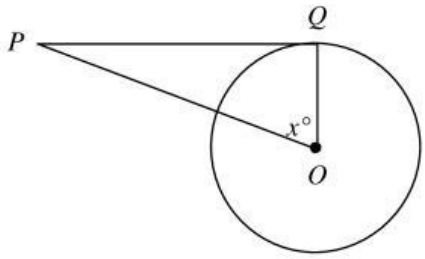
**Assume that lines that appear to be tangent are tangent. *O* is the center of the circle. Find the value of *x*. (Figures are not drawn to scale.)**

____ 68. $m\angle O = 111$




a. 291 b. 69 c. 55.5 d. 222

____ 69. $m\angle P = 12$




a. 78 b. 39 c. 102 d. 24

____ 70. $\overline{BC}$ is tangent to circle *A* at *B* and to circle *D* at *C* (not drawn to scale). $AB = 7$, $BC = 18$, and $DC = 5$. Find $AD$ to the nearest tenth.