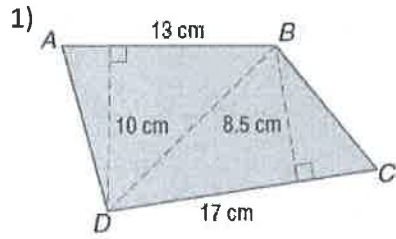


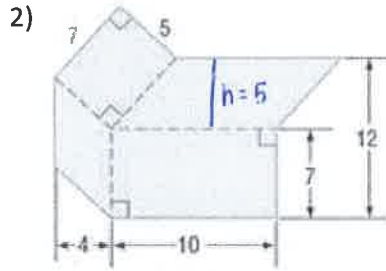
Please find the area of the following figures.



$$\Delta ADB: \frac{1}{2}(13)(10) = 65 \text{ cm}^2$$

$$\Delta OBC: \frac{1}{2}(17)(8.5) = 72.25 \text{ cm}^2$$

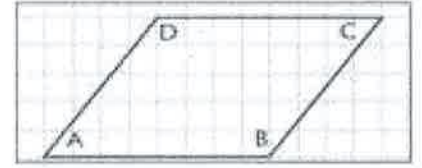
$$A = 137.25 \text{ cm}^2$$



Top Left =  $(7)(5) = 35$   
 Bot Left =  $(7)(4) = 28$   
 Top Rt =  $(10)(5) = 50$   
 Bot Rt =  $(10)(7) = 70$

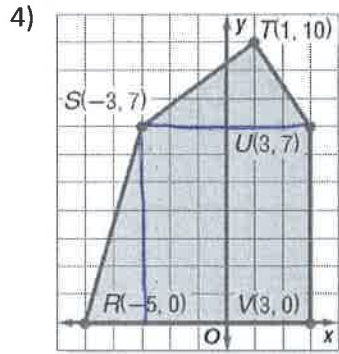
$$A = 183 \text{ units}^2$$

3)  $b = 8, h = 5$



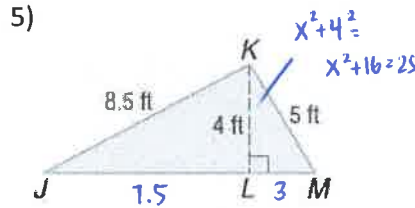
$A = (8)(5)$

$A = 40 \text{ units}^2$



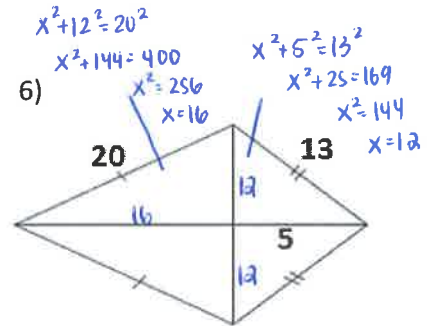
Top:  $\frac{1}{2}(6)(3) = 9$   
 □:  $(6)(7) = 42$   
 Bottom:  $\frac{1}{2}(2)(7) = 7$

$$A = 58 \text{ units}^2$$



$A = \frac{1}{2}(10.5)(4)$

$$A = 21 \text{ ft}^2$$



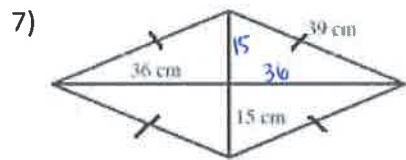
$x^2 + 12^2 = 20^2$   
 $x^2 + 144 = 400$   
 $x^2 = 256$   
 $x = 16$

$x^2 + 5^2 = 13^2$   
 $x^2 + 25 = 169$   
 $x^2 = 144$   
 $x = 12$

$d_1 = 12 + 12 = 24$   
 $d_2 = 16 + 5 = 21$

$$A = \frac{1}{2}(24)(21)$$

$$A = 252 \text{ units}^2$$

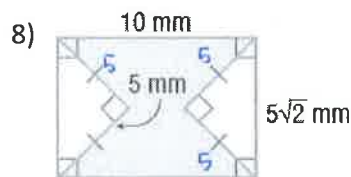


$A = \frac{1}{2}(72)(30)$

$$A = 1080 \text{ cm}^2$$

$d_1 = 36 + 36 = 72$   
 $d_2 = 15 + 15 = 30$

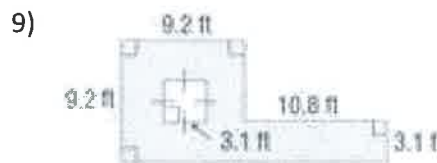
For questions #8 – 9, please find the area of the shaded region.



□:  $(10)(5\sqrt{2}) = 50\sqrt{2} \text{ mm}^2$   
 $\Delta: \frac{1}{2}(5)(5) = 12.5 \times 2 = 25 \text{ mm}^2$

$$A = 50\sqrt{2} - 25$$

$$\approx 45.7 \text{ mm}^2$$



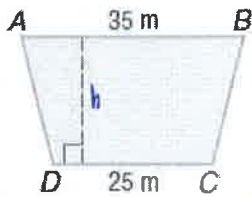
□:  $84.64 \text{ ft}^2$   
 □:  $(10.8)(3.1) = 33.48$   
 □:  $(3.1)^2 = 9.61$

$$A = 84.64 + 33.48 - 9.61$$

$$= 108.51 \text{ ft}^2$$

Given the following information, please find the missing measure for each figure.

10)  $A = 750 \text{ m}^2$ ; find the height



$$750 = \frac{1}{2}h(35+25)$$

$$750 = \frac{1}{2}h(60)$$

$$750 = 30h$$

$$h = 25 \text{ m}$$

11)  $A = 188.35 \text{ ft}^2$ ; find GK



$$A = \frac{1}{2}h(b_1+b_2)$$

$$188.35 = \frac{1}{2}(8.7)(16.5+b_2)$$

$$188.35 = 4.35(16.5+b_2)$$

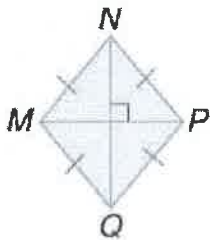
$$188.35 = 71.775 + 4.35b_2$$

$$116.575 = 4.35b_2$$

$$b_2 = 26.8 \text{ ft}$$

$$GK = 26.8 \text{ ft}$$

12)  $A = 375 \text{ in}^2$ ,  $MP = 25 \text{ in}$ ; find NQ



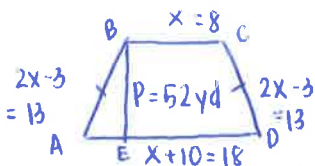
$$A = \frac{1}{2}d_1d_2$$

$$375 = \frac{1}{2}(25)(d_2)$$

$$375 = 12.5d_2$$

$$d_2 = 30 \Rightarrow NQ = 30 \text{ in}$$

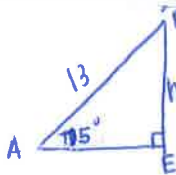
13) Find the area of an isosceles trapezoid with a perimeter of 52 yards; the measure of one base is 10 yards greater than the other base, the length of each leg is 3 yards less than twice the length of the shorter base and each base angle has a measure of  $75^\circ$ .



$$bx + 4 = 52$$

$$bx = 48$$

$$x = 8$$



$$\sin 75 = \frac{h}{13}$$

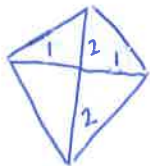
$$h = 12.6$$

$$A = \frac{1}{2}(18+8)(12.6)$$

$$= \frac{1}{2}(26)(12.6)$$

$$= 163.8 \text{ yd}^2$$

14) This quilt block is composed of twelve congruent rhombi arranged in a regular hexagon. The height of the hexagon is 8 inches. If the total area of the rhombi is 48 square inches, find the lengths of each diagonal and the area of one rhombus. Total Area  $48 \div 12 \text{ rhombi} = 4 \text{ in}^2$

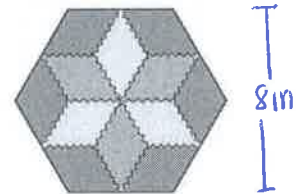


$$4 = \frac{1}{2}(4)(d_2)$$

$$4 = 2(d_2)$$

$$2 = d_2$$

$$\text{Area } 4 \text{ in}^2, \text{ diagonals: } 4 \text{ in}, 2 \text{ in}$$



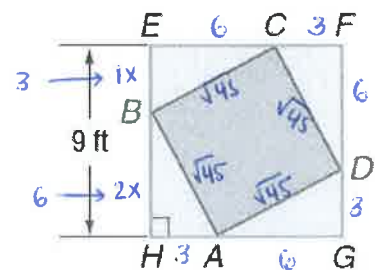
15) In the figure, the vertices of quadrilateral ABCD intersect the square EFGH and divide its sides into segments with measures that have a ratio of 1:2. Find the area of ABCD.

$$\text{Area ABCD} = (b)(h)$$

$$= (\sqrt{45})(\sqrt{45})$$

$$= \sqrt{2025}$$

$$= 45 \text{ units}^2$$



$$1x + 2x = 9$$

$$3x = 9$$

$$x = 3$$

16) Find the area of a circle whose circumference is  $34\pi$  inches. Round to the nearest tenth.

$$C = 2\pi r$$

$$34\pi = 2\pi r$$

$$r = 17 \text{ in}$$

$$A = \pi r^2$$

$$A = \pi (17)^2$$

$$A \approx 907.9 \text{ in}^2$$

17) How far will a wheel of radius 9 cm travel in two revolutions? Round your answer to the nearest centimeter.

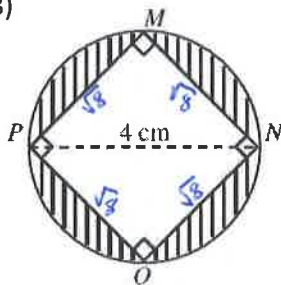
$$C = 2\pi r$$

$$C = 2\pi(9)$$

$$C = 56.55 \times 2 \text{ revolutions} = 113.1 \text{ cm}$$

For questions #18 – 24, find the area of the shaded region. Round your answers to two decimal places.

18)



$$2x^2 = 16$$

$$x^2 = 8$$

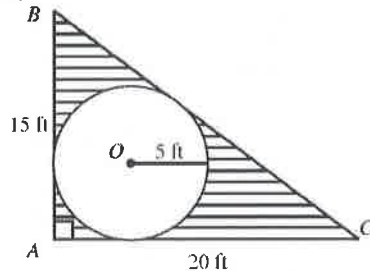
$$x = \sqrt{8}$$

$$\hat{A} = \pi(2)^2 = 12.57$$

$$\square: (\sqrt{8})^2 = 8$$

$$A = 12.57 - 8 = 4.57 \text{ cm}^2$$

19)

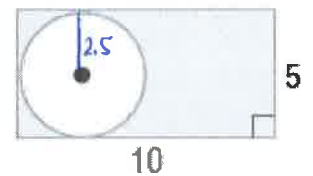


$$\Delta: \frac{1}{2}(15)(20) = 150 \text{ ft}^2$$

$$O: \pi(5)^2 = 78.54$$

$$A = 150 - 78.54 = 71.46 \text{ ft}^2$$

20)

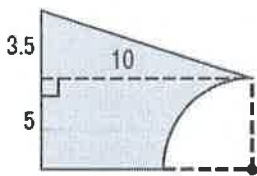


$$\square = (10)(5) = 50$$

$$O = \pi(2.5)^2 = 19.63$$

$$A = 50 - 19.63 = 30.37 \text{ units}^2$$

21)



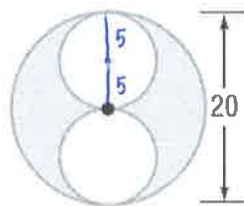
$$\Delta: \frac{1}{2}(10)(3.5) = 17.5$$

$$\square: (5)(10) = 50$$

$$\frac{1}{4} \text{ circle: } \frac{1}{4}\pi(5)^2 = 19.63$$

$$A = 17.5 + 50 - 19.63 = 47.87 \text{ units}^2$$

22)

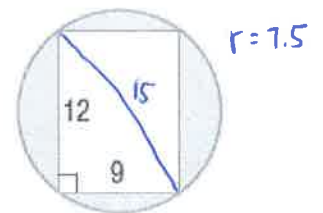


$$\text{Big} = \pi(10)^2 = 314.16$$

$$\text{sm} = \pi(5)^2 = 78.54 \times 2 = 157.08$$

$$\text{Area} = 314.16 - 157.08 = 157.08 \text{ units}^2$$

23)

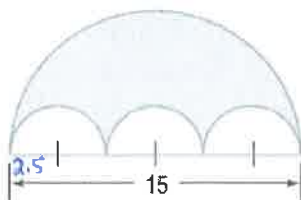


$$A O = \pi(7.5)^2 = 176.71$$

$$A \square = (12)(9) = 108$$

$$A = 176.71 - 108 = 68.71 \text{ units}^2$$

24)



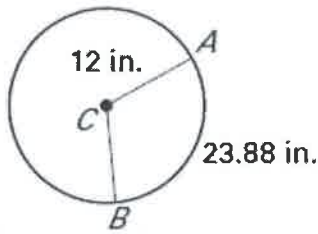
$$\text{Big} = \frac{1}{2}\pi(7.5)^2 = 88.36$$

$$\text{small} = \frac{1}{2}\pi(2.5)^2 = 9.82 \times 3 = 29.46$$

$$\text{Area} = 88.36 - 29.46 = 58.9 \text{ units}^2$$

For questions #25 – 27, find the indicated measure. Round your answers to the nearest tenth.

25)  $m\widehat{AB}$

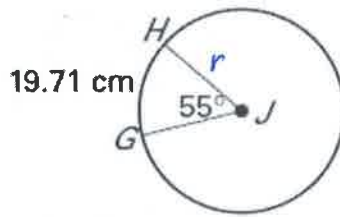


$$\frac{23.88}{2\pi(12)} = \frac{M}{360}$$

$$8596.8 = 75.4M$$

$$M \approx 114.0^\circ$$

26) Radius of circle J

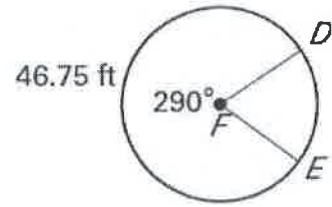


$$\frac{19.71}{2\pi r} = \frac{55}{360}$$

$$7095.6 = 345.58r$$

$$r = 20.5 \text{ cm}$$

27) Circumference of circle F

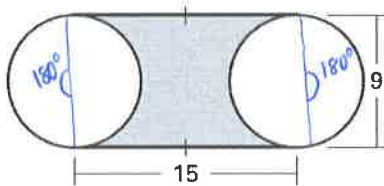


$$\frac{46.75}{C} = \frac{290}{360}$$

$$290C = 16830$$

$$C = 58.0 \text{ ft}$$

28) Please find the perimeter of the figure below assuming that the curves at the ends of the figure shown are  $180^\circ$  arcs of circles. Round to the nearest tenth.



$$\frac{L}{2\pi(4.5)} = \frac{180}{360}$$

$$360L = 5089.38$$

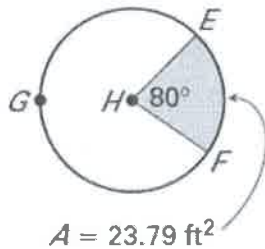
$$L = 14.1$$

$$\text{distance} = 14.1 + 14.1 + 15 + 15$$

$$= 58.2 \text{ units}$$

For questions #29 – 31, find the indicated measure. The area of the shaded sectors is given. Round your answers to the nearest tenth.

29) Area of circle H

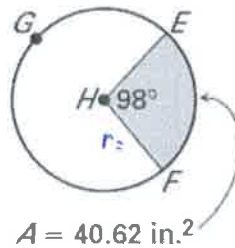


$$\frac{23.79}{A} = \frac{80}{360}$$

$$80A = 8564.4$$

$$A \approx 107.1 \text{ ft}^2$$

30) Radius of circle H



$$\frac{40.62}{\pi r^2} = \frac{98}{360}$$

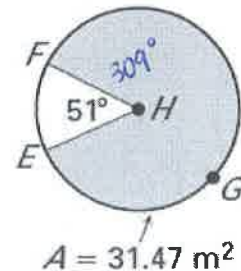
$$14623.2 = 98\pi r^2$$

$$14623.2 = 307.88r^2$$

$$47.5 \approx r^2$$

$$r \approx 6.9 \text{ in}$$

31) Diameter of circle H



$$\frac{31.47}{\pi r^2} = \frac{309}{360}$$

$$11329.2 = 309\pi r^2$$

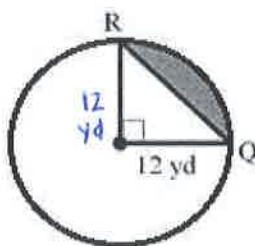
$$11329.2 = 970.75 r^2$$

$$11.67 = r^2$$

$$r \approx 3.4 \text{ m} \times 2 = 6.8 \text{ m} = d$$

Find the area of the shaded sector <sup>→ region</sup>. Round to the nearest tenth.

32)



$$A \text{ of } \Delta: \frac{1}{2}(12)(12) = 72 \text{ yd}^2$$

$$A \text{ of sector: } \frac{A}{\pi(12)^2} = \frac{90}{360}$$

$$360A = 40716.04$$

$$A = 113.1 \text{ yd}^2$$

$$\text{Area} = 113.1 - 72 = \boxed{41.1 \text{ yd}^2}$$

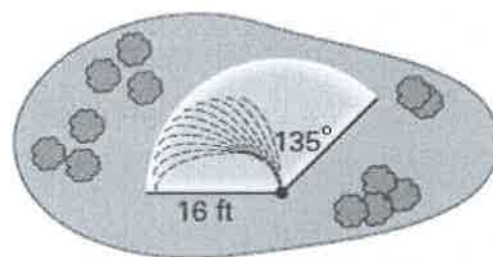
33) The diagram below shows the area of a lawn covered by a water sprinkler.

a. What is the area of the lawn that is covered by the sprinkler?

$$\frac{A}{\pi(16)^2} = \frac{135}{360}$$

$$360A = 108573.44$$

$$A = \boxed{301.6 \text{ ft}^2}$$



b. The water pressure is weakened so that the radius is 10 feet. What is the area of the lawn that will be covered?

$$\frac{A}{\pi(10)^2} = \frac{135}{360}$$

$$360A = 42411.5$$

$$A = \boxed{117.8 \text{ ft}^2}$$

34) Convert the angle to radians. Express your answer in terms of  $\pi$ .

$$\text{a. } 36^\circ \cdot \frac{\pi}{180} = \boxed{\frac{\pi}{5}}$$

$$\text{b. } 15^\circ \cdot \frac{\pi}{180} = \boxed{\frac{\pi}{12}}$$

$$\text{c. } 225^\circ \cdot \frac{\pi}{180} = \boxed{\frac{5\pi}{4}}$$

35) Convert the radian measure degrees.

$$\text{a. } \frac{9\pi}{8} \cdot \frac{180}{\pi} = \frac{1620}{8}$$

$$= \boxed{202.5^\circ}$$

$$\text{b. } \frac{7\pi}{6} \cdot \frac{180}{\pi} = \frac{1260}{6}$$

$$= \boxed{210^\circ}$$

$$\text{c. } \frac{5\pi}{3} \cdot \frac{180}{\pi} = \frac{900}{3}$$

$$= \boxed{300^\circ}$$