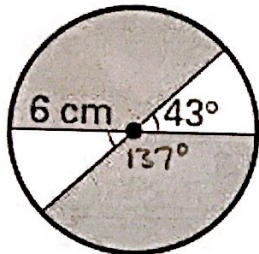


## Sector Practice Problems

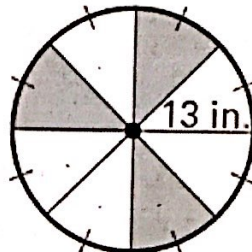
Find the area of the shaded sectors.

1.



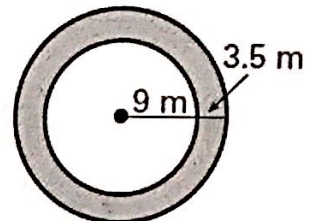
$$\begin{aligned} & \left(\frac{137}{360}\right) \pi (6)^2 \cdot 2 \\ & = 27.4 \pi \text{ cm}^2 \end{aligned}$$

2.



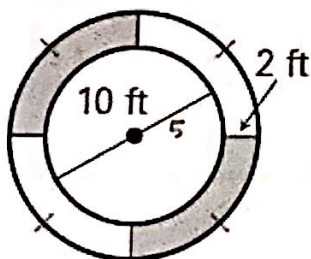
$$\begin{aligned} & \left(\frac{1}{8}\right) \pi (13)^2 \cdot 3 \\ & = 63.375 \pi \text{ in}^2 \end{aligned}$$

3.



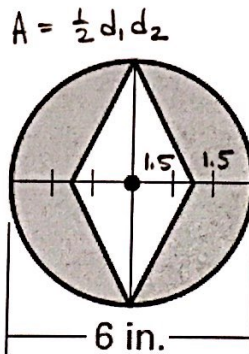
$$\begin{aligned} & \pi (12.5)^2 - \pi (9)^2 \\ & = 156.25 \pi - 81 \pi \\ & = 75.25 \pi \text{ m}^2 \end{aligned}$$

4.



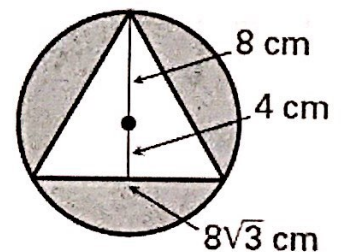
$$\begin{aligned} & \frac{\pi (7)^2 - \pi (5)^2}{2} \\ & = \frac{49\pi - 25\pi}{2} \\ & = \frac{24\pi}{2} = 12\pi \text{ ft}^2 \end{aligned}$$

5.



$$\begin{aligned} & \pi (3)^2 - \frac{1}{2} (6)(3) \\ & = (9\pi - 9) \text{ in}^2 \end{aligned}$$

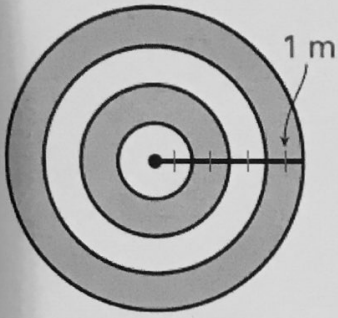
6.



$$\begin{aligned} & \pi (8)^2 - \frac{1}{2} (8\sqrt{3})(12) \\ & = (64\pi - 48\sqrt{3}) \text{ cm}^2 \end{aligned}$$

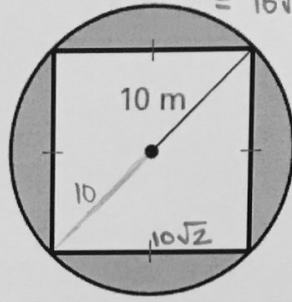
$$\begin{aligned}
 x^2 + x^2 &= 20^2 \\
 2x^2 &= 400 \\
 x^2 &= 200 \\
 x &= \sqrt{200} \\
 &= 10\sqrt{2}
 \end{aligned}$$

7.



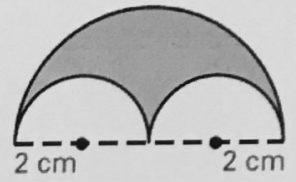
$$\begin{aligned}
 \pi(4)^2 - \pi(3)^2 + \pi(2)^2 - \pi(1)^2 \\
 = 16\pi - 9\pi + 4\pi - \pi \\
 = 10\pi \text{ m}^2
 \end{aligned}$$

8.



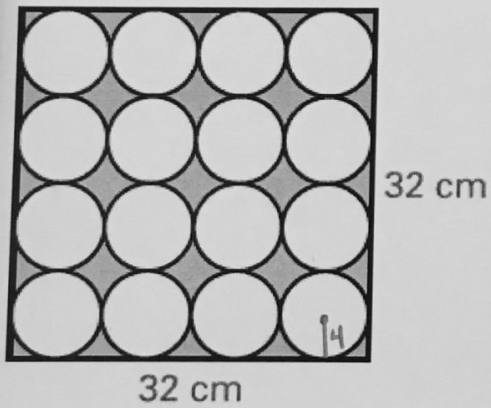
$$\begin{aligned}
 \pi(10)^2 - (10\sqrt{2})(10\sqrt{2}) \\
 = 100\pi - (100)(2) \\
 = (100\pi - 200) \text{ m}^2
 \end{aligned}$$

9.



$$\begin{aligned}
 \frac{\pi(4)^2}{2} - \pi(2)^2 \\
 = 8\pi - 4\pi \\
 = 4\pi \text{ cm}^2
 \end{aligned}$$

10.



$$\begin{aligned}
 (32)(32) - \pi(4)^2(16) \\
 = (1024 - 256\pi) \text{ cm}^2
 \end{aligned}$$