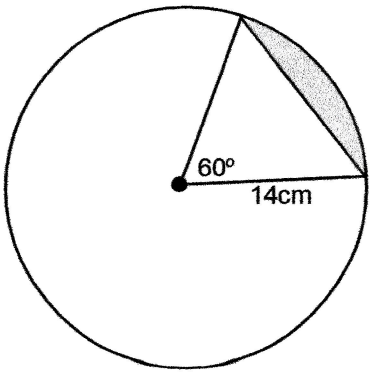
Geo Practice #20 Sec 10-7 Area of a Segment Wednesday, April 22, 2020

Find the area of each shaded segment to the nearest hundredth.

SOLUTIONS

1.



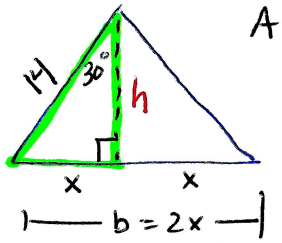
① Area of Sector

- Area of circle $= \pi(14)^2 = 196\pi$

$$\frac{60^\circ}{360^\circ} = \frac{x}{196\pi}$$

$x = 102.63\ cm^2$

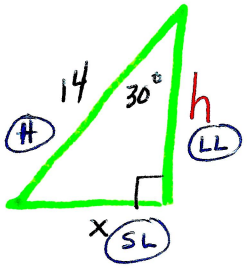
② Area of Δ



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

$= \frac{1}{2}(14)(7\sqrt{3})$

$= 84.87\ cm^2$



$x = \frac{14}{2} = 7$

$b = 2x = 14$

$h = SL \cdot \sqrt{3}$

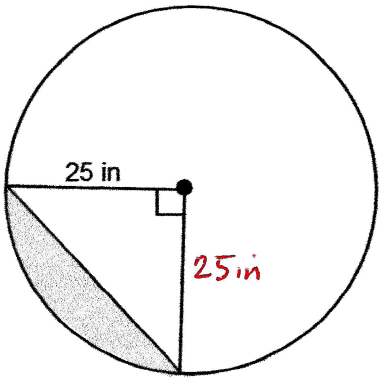
$h = 7\sqrt{3}$

③ Area of segment = Area sector − Area of Δ

$= 102.63 - 84.87$

$= 17.76\ cm^2$

2.



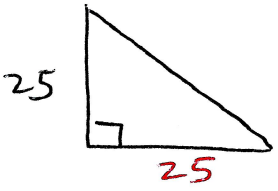
① Area of Sector

- Area of circle $= \pi(25)^2 = 625\pi\ in^2$

$$\frac{90^\circ}{360^\circ} = \frac{x}{625\pi}$$

$x = 490.87\ in^2$

② Area of Δ



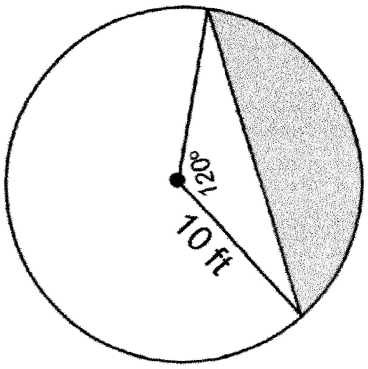
$A = \frac{1}{2}(25)(25)$

$A = 312.50\ in^2$

③ Area of segment = Area of sector − Area of Δ

$= 490.87 - 312.50 = 178.37\ in^2$

3.



① Area of Sector

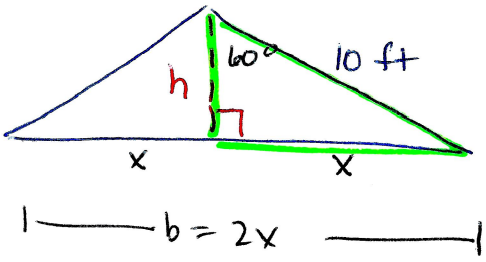
• Area of Circle $= \pi (10)^2$

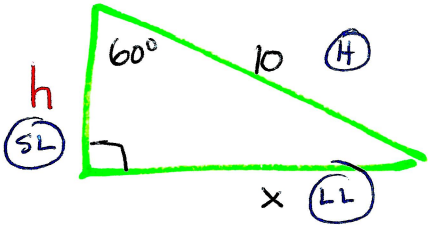
$= 100\pi$ ft²

$$\frac{120^\circ}{360^\circ} = \frac{x}{100\pi}$$

$x = 104.72$ ft²

② Area of Δ





$h = SL = \frac{10}{2} = 5$

$x = LL = 5\sqrt{3}$

$b = 2x = 2(5\sqrt{3}) = 10\sqrt{3}$

$A = \frac{1}{2}bh = \frac{1}{2}(10\sqrt{3})(5)$

Area Δ $= 43.30$ ft²

Area of Segment = Area of Sector − Area of Δ

$= 104.72 - 43.30 =$ **61.42 ft²**