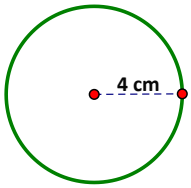
Area of Circles and Sectors

G.GMD.A.1 Hw Section 16.5 Name_____

Find the area. Give exact answer unless told otherwise.

1.

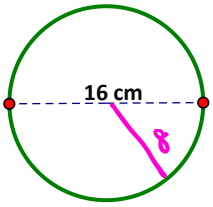


$A_{\odot} = \pi r^2$

$= \pi(4)^2$

$A_{\odot} = 16\pi \text{ cm}^2$

2.

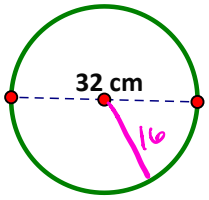


$A_{\odot} = \pi r^2$

$= \pi(8)^2$

$A_{\odot} = 64\pi \text{ cm}^2$

3.

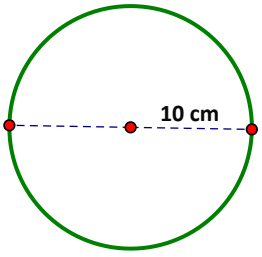


$A_{\odot} = \pi r^2$

$= \pi(16)^2$

$A_{\odot} = 256\pi \text{ cm}^2$

4.



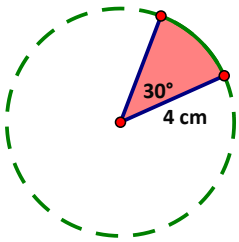
$A_{\odot} = \pi r^2$

$= \pi(10)^2$

$A_{\odot} = 100\pi \text{ cm}^2$

Determine the area of each sector. Give exact answers unless told otherwise.

5.



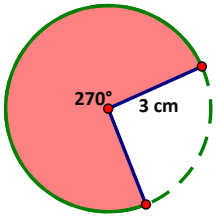
$A_{\triangle} = \frac{\theta}{360} \pi r^2$

$= \frac{30}{360} \pi(4)^2$

$= \frac{1}{12}(16\pi)$

$A_{\triangle} = \frac{4}{3}\pi \text{ cm}$

6.



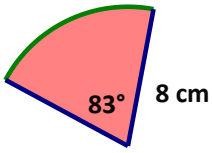
$A_{\triangle} = \frac{\theta}{360} \pi r^2$

$= \frac{270}{360} \pi(3)^2$

$= \frac{3}{4}(9\pi)$

$A_{\triangle} = \frac{27}{4}\pi \text{ cm}^2$

7. Round to 2 decimal places.



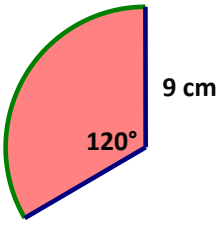
$A_{\triangle} = \frac{\theta}{360} \pi r^2$

$= \frac{83}{360} \pi(8)^2$

$= \frac{83}{360} 64\pi$

$A_{\triangle} \approx 46.36 \text{ cm}^2$

8.



$A_{\triangle} = \frac{\theta}{360} \pi r^2$

$= \frac{120}{360} \pi(9)^2$

$= \frac{1}{3}(81\pi)$

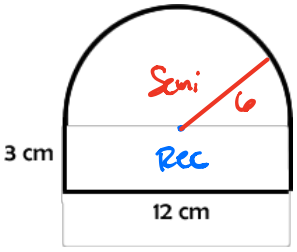
$A_{\triangle} = 27\pi \text{ cm}^2$

Area of Circles and Sectors

G.GMD.A.1 Hw Section 16.5 Name_____

Determine the area of the following figures. Assume lines that appear perpendicular and parallel are in fact so.

9.



$A_{FIG} = A_{Rec} + A_{Semi}$

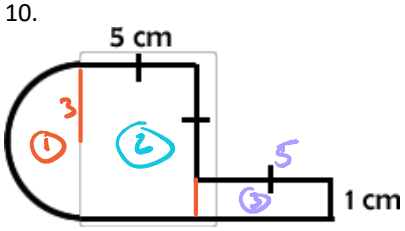
$= b \cdot h + \frac{1}{2}\pi r^2$

$= 12(3) + \frac{1}{2}\pi(6)^2$

$= 36 + \frac{1}{2}(36\pi)$

$A_{FIG} = (36 + 18\pi)\,cm^2$

10.



$A_{FIG} = A_{①} + A_{②} + A_{③}$

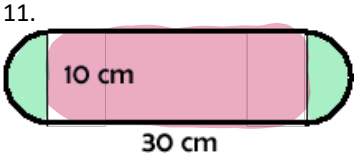
$= \frac{1}{2}\pi r^2 + b_2 h_2 + b_3 h_3$

$= \frac{1}{2}\pi(3)^2 + (5)(6) + (5)(1)$

$= \frac{1}{2}(9\pi) + 30 + 5$

$A_{FIG} = \left(\frac{9}{2}\pi + 35\right)cm^2$

11.



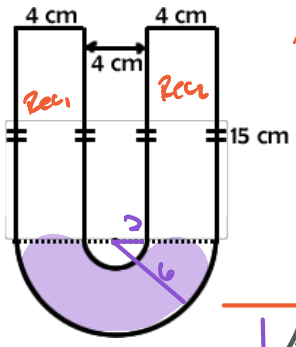
$A_{FIG} = A_{circle} + A_{Rec}$

$= \pi r^2 + b \cdot h$

$= \pi(5)^2 + 10(30)$

$A_{FIG} = (25\pi + 300)\,cm^2$

12.



$A_{\square\square} = A_{Rec_1} + A_{Rec_2}$

$= b \cdot h + b \cdot h$

$= 4(15) + 4(15)$

$= 60 + 60$

$A_{\square\square} = 120\,cm^2$

$A_{\cup} = \frac{1}{2}A_{\bigcirc} - \frac{1}{2}A_{\bigcirc}$

$= \frac{1}{2}\pi r^2 - \frac{1}{2}\pi r_1^2$

$= \frac{1}{2}\pi(6)^2 - \frac{1}{2}\pi(2)^2$

$= \frac{1}{2}\cdot 36\pi - \frac{1}{2}\cdot 4\pi$

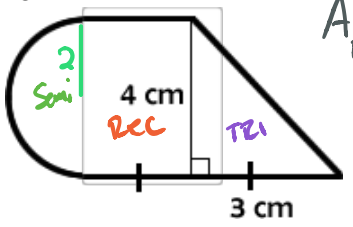
$= 18\pi - 2\pi$

$A_{\cup} = 16\pi\,cm^2$

$A_{FIG} = A_{\square\square} + A_{\cup}$

$= (120 + 16\pi)\,cm^2$

13.



$A_{FIG} = A_{Semi} + A_{Rec} + A_{Tri}$

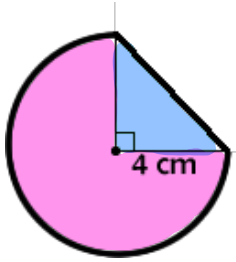
$= \frac{1}{2}\pi r^2 + bh + \frac{1}{2}bh$

$= \frac{1}{2}\pi(2)^2 + (4)(3) + \frac{1}{2}(3)(4)$

$= \frac{1}{2}(4\pi) + 12 + 6$

$A_{FIG} = (2\pi + 18)\,cm^2$

14.



$A_{FIG} = A_{\bigcirc} + A_{\triangle}$

$= \frac{\theta}{360}\pi r^2 + \frac{1}{2}bh$

$= \frac{270}{360}\pi(4)^2 + \frac{1}{2}(4)(4)$

$= \frac{3}{4}(16\pi) + 8$

$A_{FIG} = (12\pi + 8)\,cm^2$