

Homework Due Friday 4<sup>th</sup> Feb,

$$\begin{aligned} 1) \text{ Volume of a sphere} &= \frac{4}{3} \pi r^3 \\ &= \frac{4}{3} \pi \times 9^3 \\ &= 3053.63 \text{ cm}^3 \\ &\quad (972 \pi \text{ cm}^3) \end{aligned}$$

$$\begin{aligned} 2) \text{ Volume of a cylinder} &= \pi r^2 h \\ &= \pi \times 5^2 \times 19.3 \\ &= 1515.82 \text{ cm} \end{aligned}$$

$$3) a) x^2 + 6x + 8 = (x + 4)(x + 2) \quad \left( \frac{965}{2} \pi \right)$$

$$b) x^2 - 3x - 28 = (x - 7)(x + 4)$$

$$c) x^2 - 15x + 50 = (x - 10)(x - 5)$$

$$4) a) x^2 - 9 = (x + 3)(x - 3)$$

$$b) 4x^2 - 36 = (2x - 6)(2x + 6)$$

$$c) 25x^2 - 64 = (5x - 8)(5x + 8)$$

$$5) a) x^2 + 8x + 19 = (x + 4)^2 + 3$$

$$b) x^2 + 10x - 13 = (x + 5)^2 - 38$$

$$c) y^2 - 12y - 15 = (y - 6)^2 - 51$$

$$\text{Arc Length} = \pi \times 6 \times \frac{40}{360}$$

$$= 2.09 \text{ cm (2dp)} \quad (2)$$

$$\text{Sector Area} = \pi \times 3^2 \times \frac{40}{360}$$

$$= 3.14 \text{ cm}^2 \text{ (2dp)} \quad (2)$$

$$\text{Arc Length} = \pi \times 11.2 \times \frac{160}{360}$$

$$= 15.64 \text{ cm (2dp)} \quad (2)$$

$$\text{Sector Area} = \pi \times 5.6^2 \times \frac{160}{360}$$

$$= 43.79 \text{ cm}^2 \text{ (2dp)} \quad (2)$$

In a clock there are 12, 5 min sections  
so the angle between 0 and 5 mins.

$$= \frac{360}{12} = 30^\circ$$



o the angle between 0 and 25 mins

$$= \frac{360}{12} \times 5 = 150^\circ \quad (2)$$

$$\text{Arc length} = \pi \times d \times \frac{150}{360} = 120 \text{ cm}$$

$$d = 91.67 \text{ cm}$$