Year 6 Homework Answers

Module 7: Cylinders

1.

266π cm^2	37.5 π m^2

2.

Radius	Diameter	Circumference	Height	Surface Area
6 cm	12 cm	12π cm	8 cm	168π cm^2
5.5 mm	11 mm	11π mm	10 mm	170.5π mm^2
4 cm	8 cm	8π cm	15 cm	152π cm^2
20 m	40 m	40π m	11 m	1240π m^2
17 mm	34 mm	34π mm	7 mm	816π mm^2

3.

$$A = 2\pi rh + 2\pi r^2 = 2 \cdot \pi \cdot 4.5 \cdot 14 + 2 \cdot \pi \cdot 4.5^2 = 166.5\pi\ cm^2$$

4.

$$A = 2\pi rh + \pi r^2 = 2 \cdot \pi \cdot 16 \cdot 12 + \pi \cdot 16^2 = 640\pi\ cm^2$$

5.

Radius	Diameter	Height	Circumference	Volume
8 cm	16 cm	19 cm	16π cm	1216π cm^3
11.5 cm	23 cm	15 cm	23π cm	1983.75π cm^3
5 mm	10 mm	18 mm	10π mm	450π mm^3
14 m	28 m	14 m	28π m	2744π m^3
11 mm	22 mm	35 mm	22π mm	4235π mm^3

6.

423.5π mm^3	99π cm^3	46.875π m^3
60.9375π mm^3	56.25π m^3	141.75π cm^3

7.

5292π mm^3	2166π cm^3

8.

$V = \pi \cdot 3^2 \cdot 27 = 243\pi\ cm^3$

9.

$V = \ \pi \cdot 17^2 \cdot 35 = 10115\pi\ cm^3$

10. *If the question shows "diameter of 11cm" change it into "radius"*

$h = \frac{V}{\pi r^2} = \frac{2210.56}{3.14 \times 11^2} = 5.8\ cm$

11.

$V = \pi \cdot 1.75^2 \cdot 3.4 = 10.4125\pi\ m^3$

12.

$V = \pi \cdot 9^2 \cdot 27 = 2187\pi\ cm^3$

2187π ÷ 3π = 729 candies

13.

$V = \pi \cdot 1.5^2 \cdot 5 = 11.25\pi\ cm^3$

$11.25\pi\ \times 9 = 101.25\pi\ cm^3$

14.

Cup A: $V = \pi \cdot 5^2 \cdot 11 = 275\pi\ cm^3$

Cup B: $V = \pi \cdot 6^2 \cdot 7 = 252\pi\ cm^3$

Cup C: $V = \pi \cdot 3^2 \cdot 15 = 135\pi\ cm^3$