

## Workout 1

Question 1(a): 2

Question 1(b): 4

Question 2: 9

Question 3(a):  $45\text{cm}^2$

Question 3(b):  $320\text{cm}^2$

Question 3(c):  $15\text{cm}^2$

Question 3(d):  $144\text{cm}^2$

Question 3(e):  $96\text{cm}^2$

Question 3(f):  $275\text{cm}^2$

Question 4(a): 12cm

Question 4(b): 60cm

Question 4(c): 6cm

Question 4(d): 6.5cm

Question 5(a):  $200\text{cm}^2$

Question 5(b):  $100\text{cm}^2$

Question 6(a): 5.5m

Question 6(b):  $\frac{1}{3}$  cm

## Workout 2

Question 1(a): 3

Question 1(b): 9

Question 1(c): 27

Question 2: 125

Question 3(a):  $540\text{cm}^3$

Question 3(b):  $312.5\text{cm}^3$

Question 3(c):  $80\text{cm}^3$

Question 3(d):  $4160\text{mm}^3$

Question 4(a): 18cm

Question 4(b) 3cm

Question 4(c): 8cm

Question 4(d) 21.6cm

Question 5(a):  $4800\text{cm}^3$

Question 5(b):  $3.2\text{cm}^3$

Question 5(c):  $6480\text{cm}^3$

Question 5(d):  $27648\pi \text{ cm}^3$

Question 6(a):  $64\text{cm}^2$

Question 6(b):  $576\pi \text{ cm}^2$

### Workout 3

Question 1(a): 9 : 25

Question 1(b): 27 : 125

Question 2(a): 81 : 4

Question 2(b): 729 : 8

Question 3(a): 2 : 7

Question 3(b): 8 : 343

Question 4(a): 3 : 10

Question 4(b): 9 : 100

Question 5: 54cm

Question 6:  $22.5\text{cm}^2$

### Apply

Question 1: As the sides of B are 3 times larger, then the surface area is 9 times larger ( $3^2 = 9$ )

Question 2: 2.7 Litres (2700ml)

Question 3: 810ml

Question 4: As the height of the smaller bottle is  $\frac{3}{4}$  of the larger, the volume would be  $(\frac{3}{4})^3$  of the larger. So the smaller contains  $\frac{27}{64}$  of the volume of the larger.

Question 5: As the height is 2.75 times larger, the volume would be  $2.75^3 = 20.7968\dots$  times larger. Therefore the claim is fair.

Question 6: 80g

Question 7:  $\left(\frac{12}{25}\right)^3$  is approximately 11.06%, so yes Anna is correct.

Question 8: (30.5, 24)

Question 9: 7.5cm

Question 10: 45 : 20 : 44

Question 11: 216 : 125

Question 12: 381.838cm<sup>3</sup>

Question 13: 91

Question 14: 8 : 2197

Question 15: 2625N

Question 16: 11269.7g

Question 17:  $3671.875 \text{ cm}^3 \leq y < 3828.125\text{cm}^3$

Question 18(a):  $\frac{1}{8}$

Question 18(b):  $\frac{7}{8}$