Surface Area – Review

1.   A cylindrical hot water tank has a diameter of 4.4 m and height 2.1 m.

A) What is the surface area of the cylinder?

$d = 4.4$
$r = 4.4 \div 2 = 2.2$
$r^2 = 2.2^2 = 2.2 \times 2.2 = 4.84$
$h = 2.1$

$$S.A_{cylinder} = \left[2\pi r^2\right] + \left[2\pi rh\right]$$

$$= \left[2 \times 3.14 \times 4.84\right] + \left[2 \times 3.14 \times 2.2 \times 2.1\right]$$

$$= \left[30.3952\right] + \left[29.0136\right]$$

$$= 59.4088 \, m^2$$

B) How many cans of paint are needed to paint the hot water tank, if one can of paint covers 25 m²?
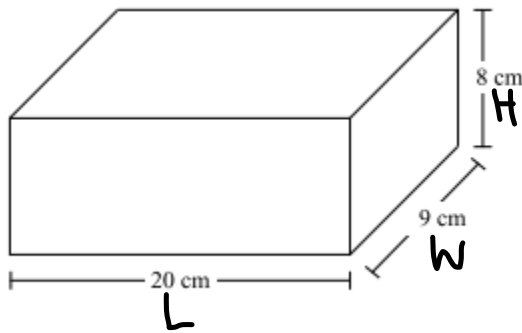
$$59.4088 \div 25 = 2.376352$$

So, 3 cans of paint is needed.

2.   What is the area of the curved surface?

3 cm

8 cm
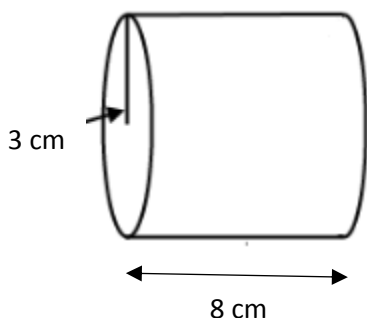
$$2\pi rh$$

$$= 2(3.14)(3)(8)$$

$$= 150.72 \, cm^2$$

3.   What is the surface area for the rectangular prism?

8 cm H

9 cm W

20 cm L

$$S.A = [2 \times L \times w] + [2 \times L \times H] + [2 \times W \times H]$$

$$= [2 \times 20 \times 9] + [2 \times 20 \times 8] + [2 \times 9 \times 8]$$

$$= 360 + 320 + 144$$

$$= 824 \, cm^2$$

4.   A rectangular prism building is 50 m by 43 m by 65 m. The building owner wants to paint the 4 walls. What is the surface area to be painted?
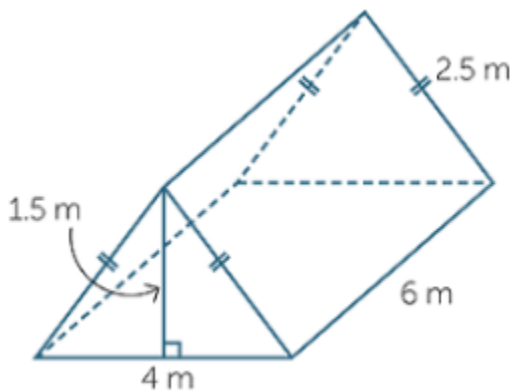
L   W   H

$$S.A = [2 \times L \times H] + [2 \times W \times H]$$

$$= [2 \times 50 \times 65] + [2 \times 43 \times 65]$$

$$= 6500 + 5590$$

$$= 12\,090 \, m^2$$

5.   What is the surface area of the triangular prism?

2.5 m

1.5 m

6 m

4 m

$$S.A = \left[2 \times \text{Area of tri}\right] + \left[\text{Area of } R1\right] + \left[\text{Area of } R2\right] + \left[\text{Area of } R3\right]$$

$$= \left[2 \times \frac{4 \times 1.5}{2}\right] + [6 \times 2.5] + [6 \times 2.5] + [4 \times 6]$$

$$= 6 + 15 + 15 + 24$$

$$= 60 \, m^2$$