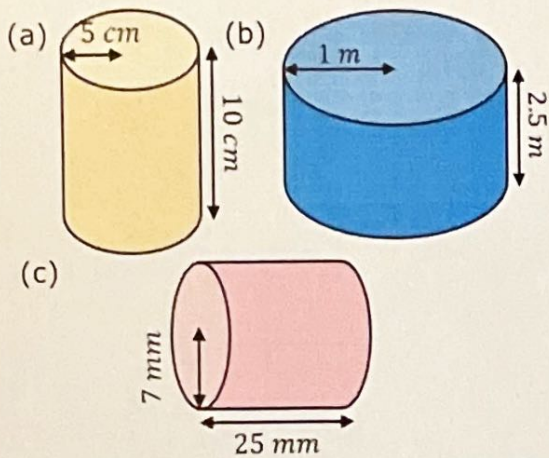


Surface Areas of Cylinders

Find the total surface areas of these cylinders.



$$(a) 2 \times \pi \times 5^2 + \pi \times 10 \times 10$$

$$= 150\pi = 471.2 \text{ cm}^2$$

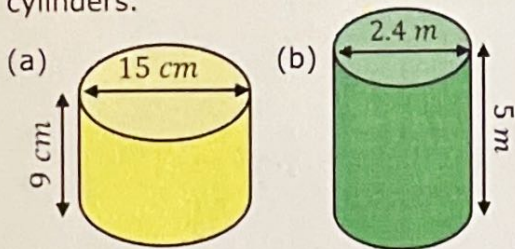
$$(b) 2 \times \pi \times 1^2 + \pi \times 2 \times 2.5$$

$$= 7\pi = 22.0 \text{ m}^2$$

$$(c) 2 \times \pi \times 7^2 + \pi \times 14 \times 25$$

$$= 448\pi = 1407.4 \text{ mm}^2$$

Find the total surface areas of these cylinders.



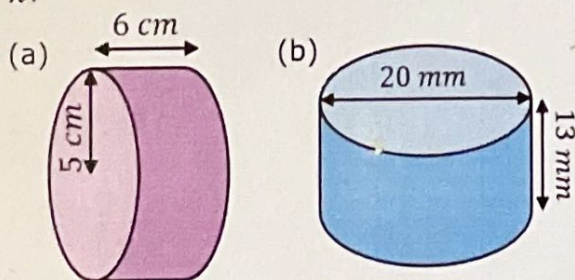
$$(a) 2 \times \pi \times 7.5^2 + \pi \times 15 \times 9$$

$$= \frac{495}{2} \pi = 777.5 \text{ cm}^2$$

$$(b) 2 \times \pi \times 1.2^2 + \pi \times 2.4 \times 5$$

$$= \frac{372}{25} \pi = 46.7 \text{ m}^2$$

Find the total surface areas of these cylinders, leaving your answer in terms of π .



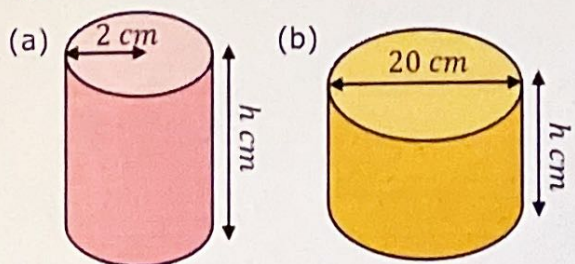
$$(a) 2 \times \pi \times 5^2 + \pi \times 10 \times 6$$

$$= 110\pi \text{ cm}^2$$

$$(b) 2 \times \pi \times 10^2 + \pi \times 20 \times 13$$

$$= 460\pi \text{ mm}^2$$

Find the missing lengths in these cylinders.



Curved surface
area = $54\pi \text{ cm}^2$

Total surface
area = $345\pi \text{ cm}^2$

$$(a) \pi \times 4 \times h = 54\pi$$

$$h = 13.5 \text{ cm}$$

$$(b) 2 \times \pi \times 10^2 + \pi \times 20 \times h = 345\pi$$

$$200\pi + 20\pi h = 345\pi$$

$$20h = 145$$

$$h = 7.25 \text{ cm}$$