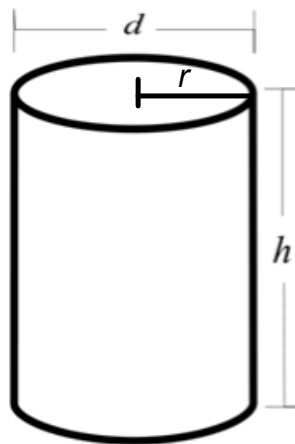


Section 1.4 - Surface Area Involving Cylinders

Recall



A cylinder has 2 congruent bases (circles) and a curved surface

d - diameter
r - radius
h - height

Each base is a circle...

$$A = \pi \times r \times r$$
$$= \pi r^2$$

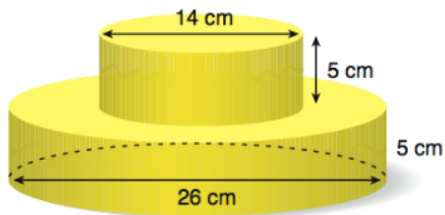
$$\pi = 3.14$$

$$SA = 2(\text{area base}) + \text{curved surface area}$$
$$= 2\pi r^2 + 2\pi rh$$

Page 36 #2

Two round cakes have diameters of 14 cm and 26 cm, and are 5 cm tall.

They are arranged as shown. The cakes are covered in frosting. What is the area of frosting?



**we will not include the base of the large cake, as it will not be frosted

$$\begin{aligned} SA_{\text{sm cake}} &= 2\pi r^2 + 2\pi rh && \text{diameter} = 14 \quad \text{radius} = 7 \\ &= (2)(\pi)(7)(7) + (2)(\pi)(7)(5) \\ &= (2)(3.14)(7)(7) + (2)(3.14)(7)(5) \\ &= 307.72 + 219.8 \\ &= 527.52\text{cm}^2 \end{aligned}$$

$$\begin{aligned} SA_{\text{lg cake}} &= \pi r^2 + 2\pi rh \\ &= (\pi)(13)^2 + (2)(\pi)(13)(5) \\ &= (3.14)(169) + (2)(3.14)(13)(5) \\ &= 530.66 + 408.20 \\ &= 938.86\text{cm}^2 \end{aligned}$$

$$\begin{aligned} SA_{\text{overlap}} &= 2\pi r^2 \\ &= 2(3.14)(7)^2 \\ &= 307.72\text{cm}^2 \end{aligned}$$

$$\begin{aligned} TSA &= SA_{\text{sm cake}} + SA_{\text{lg cake}} - SA_{\text{overlap}} \\ &= 527.52 + 938.86 - 307.72 \\ &= 1158.66\text{cm}^2 \end{aligned}$$

Book Work...Page 40

#'s 3 (a)(b)(c)

4 (a)(b)

5 (a)

Review... Page 45

Question 1, column 1

Question 2, column 2

Questions 3-8, 10-13, 15, 16, 19

In Class Assignment

Test

