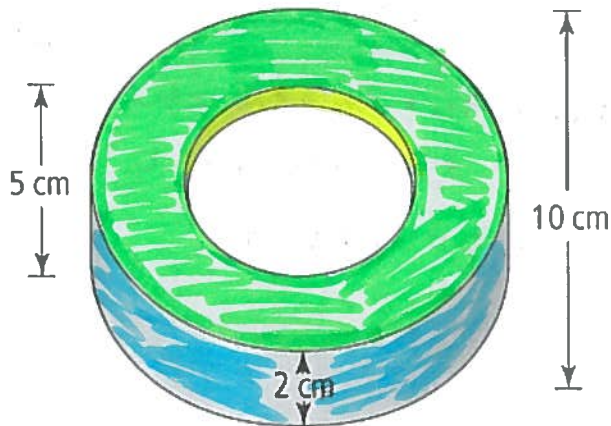


Surface Area Cont.

Find the surface area of the shapes provided in the example below. For each question use a formula, show your substitution and calculate the answer with correct units. If needed, round your answer to the nearest tenth.

Example #1



$$\begin{aligned}
 A_1 &= 2[\pi r^2 - \pi r^2] \\
 &= 2[\pi(5)^2 - \pi(2.5)^2] \\
 &= 2[78.5398 - 19.6349] \\
 &= 2[58.9048] \\
 &= 117.809691
 \end{aligned}$$

$$\begin{aligned}
 A_2 &= \pi dh \\
 &= \pi(5)(2) \\
 &= 31.41592
 \end{aligned}$$

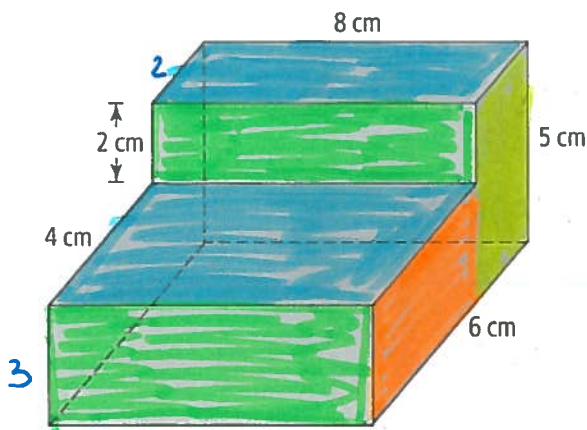
$$\begin{aligned}
 A_3 &= \pi dh \\
 &= \pi(10)(2) \\
 &= 62.8318
 \end{aligned}$$

$$\begin{aligned}
 SA_{TOTAL} &= 117.8096 + 31.41592 \\
 &\quad + 62.8318
 \end{aligned}$$

$$= 212.05732$$

The surface area is 212.1 cm².

Example #2



$$\begin{aligned}
 A_1 &= 2lw \\
 &= 2(5)(8) \\
 &= 80
 \end{aligned}$$

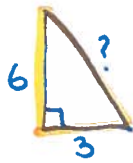
$$\begin{aligned}
 A_2 &= 2lw \\
 &= 2(5)(6) \\
 &= 60
 \end{aligned}$$

$$\begin{aligned}
 A_3 &= 2lw \\
 &= 2(2)(5) \\
 &= 20
 \end{aligned}$$

$$\begin{aligned}
 A_4 &= 2lw \\
 &= 2(4)(3) \\
 &= 24
 \end{aligned}$$

$$\begin{aligned}
 SA_{TOTAL} &= 80 + 60 + 20 + 24 \\
 &= 184
 \end{aligned}$$

The surface area is 184 cm².



$$a^2 + b^2 = c^2$$

$$6^2 + 3^2 = c^2$$

$$36 + 9 = c^2$$

$$\sqrt{45} = c$$

$$6.7082 = c$$

$$A_1 = (8)(12)$$

$$= 96$$

$$A_2 = (6)(12)$$

$$= 72$$

$$A_3 = (5)(12)$$

$$= 60$$

$$A_4 = (6.7082)(12)$$

$$= 80.4984$$

$$A_4 = 2lw$$

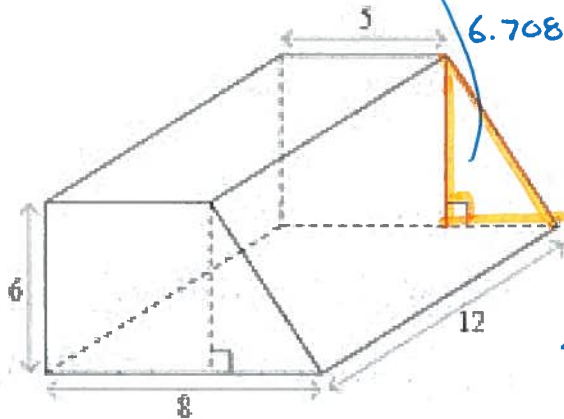
$$= 2(6)(5)$$

$$= 60$$

$$A_4 = \frac{2bh}{2}$$

$$= (3)(6)$$

$$= 18$$



$$SA_{TOTAL} = 96 + 72 + 60 + 60$$

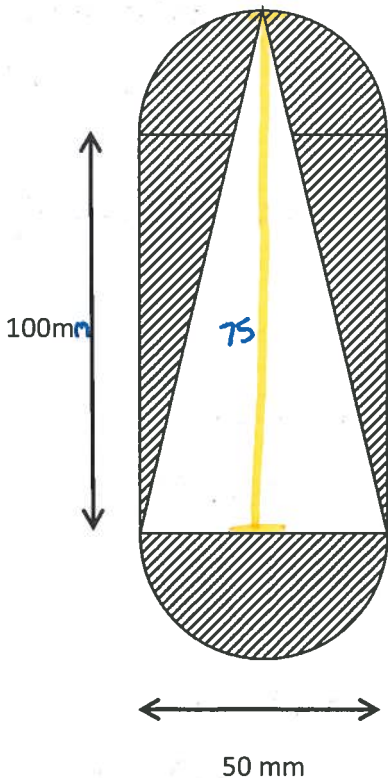
$$+ 80.4984 + 18$$

$$= 386.4984$$

The surface area is 386.5.

Example #4

Find the Area of the shaded region below



$$A_{RECTANGLE} = lw$$

$$= (100)(50)$$

$$= 5000$$

$$A_{CIRCLE} = \pi r^2$$

$$= \pi (25)^2$$

$$= 1963.495$$

$$A_{TRIANGLE} = \frac{bh}{2}$$

$$= \frac{(50)(75)}{2}$$

$$= 1875$$

$$A_{TOTAL} = 5000 + 1963.495 - 1875$$

$$= 5088.495$$

The area is 5088.5 mm²