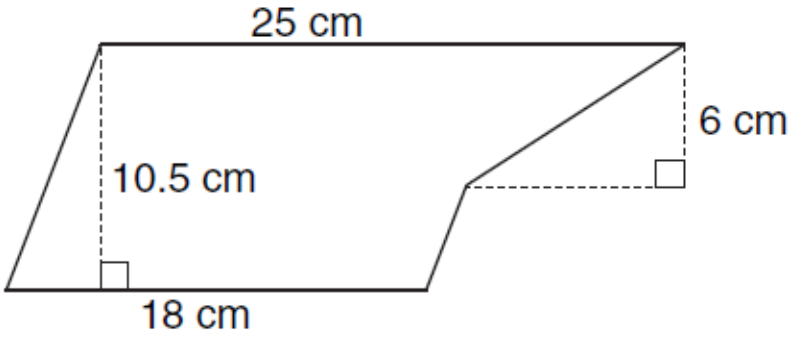
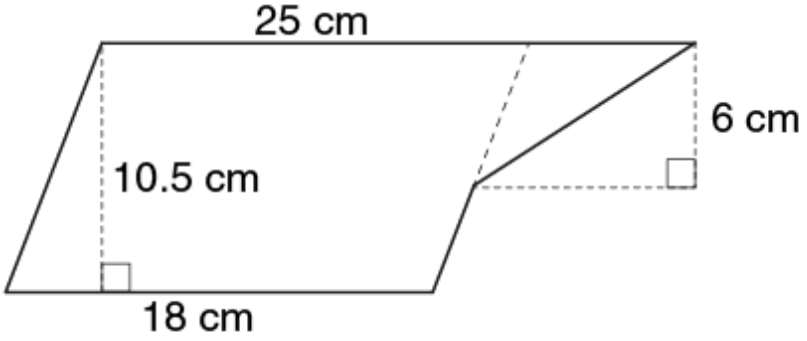
Area of Composite Figures

1. Determine the area of the composite figure shown.



Step 1: Separate the figure into simple shapes.

The figure can be split into a parallelogram and a triangle.



Step 2: Calculate the area of each shape, and then add the areas together.

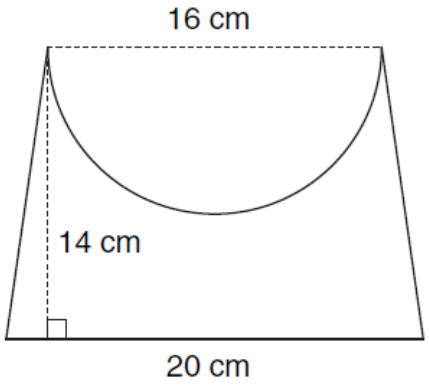
$$\begin{aligned} A_{parallelogram} &= bh \\ &= 18\ cm \times 10.5\ cm \\ &= 189\ cm^2 \end{aligned}$$

$$\begin{aligned} A_{triangle} &= \frac{bh}{2} \\ &= \frac{7\ cm \times 6\ cm}{2} \\ &= 21\ cm^2 \end{aligned}$$

$$\begin{aligned} A_{total} &= A_{parallelogram} + A_{triangle} \\ &= 189\ cm^2 + 21\ cm^2 \\ &= 210\ cm^2 \end{aligned}$$

The area of the composite figure is 210 cm^2.

2. Determine the area of the following shape.



Step 1: Separate the figure into simple shapes.

The figure can be split into a trapezoid and a semi-circle.

Step 2: Calculate the area of each shape, and then subtract the areas.

$$A_{trapezoid} = \frac{(a+b)h}{2}$$
$$= \frac{(16\ cm + 20\ cm) \times 14\ cm}{2}$$
$$= 252\ cm^2$$

$$A_{semi-cirlce} = \frac{\pi r^2}{2}$$
$$= \frac{\pi(8\ cm)^2}{2}$$
$$= 100.5\ cm^2$$

$$A_{total} = A_{trapezoid} - A_{semi-circle}$$
$$= 252\ cm^2 - 100.5\ cm^2$$
$$= 151.5\ cm^2$$

The area of the composite figure is approximately 151.5 cm^2.