

Squared Conversions

$$4546 \text{ cm}^2 = \underline{\hspace{2cm}} \text{ m}^2$$

$$\frac{1 \text{ m}}{100 \text{ cm}}$$

$$\frac{1 \text{ m}^2}{10000 \text{ cm}^2} = \frac{x}{4546 \text{ cm}^2}$$

$$10000 x = 4546$$

$$x = 4546$$

$$\frac{\quad}{10000}$$

$$x = 0.4546$$

$$1 \text{ m} = 100 \text{ cm}$$

$$1 \text{ m}^2 = 10000 \text{ cm}^2$$

$$\div$$

$$4546 \div 10000$$

$$= 0.4546$$

$$6.43 \text{ m}^2 = \underline{\hspace{2cm}} \text{ cm}^2$$

$$\frac{1 \text{ m}}{100 \text{ cm}}$$

Squared

$$\frac{1 \text{ m}^2}{10000 \text{ cm}^2} = \frac{6.43}{x}$$

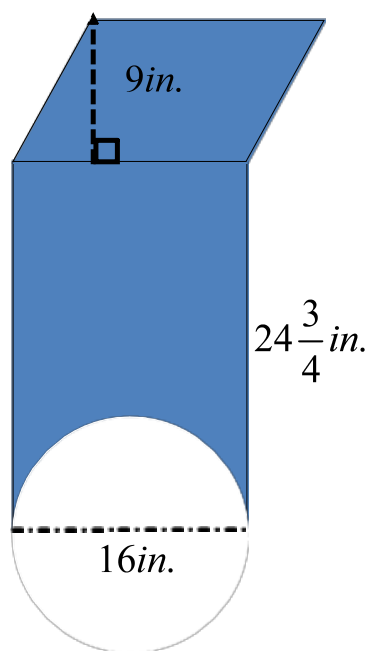
$$x = 6.43 \times 10000 \\ = 64300$$

$$\begin{array}{c} \div \\ \curvearrowleft \\ 1 \text{ m}^2 = 10000 \text{ cm}^2 \\ \curvearrowright \\ \times \\ = 64300 \end{array}$$

2.1 Area Applications

A composite figure is a figure made up of other basic shapes.

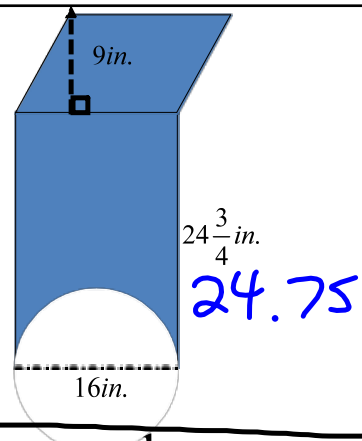
Describe the shapes that make up the figure.



To find the area of a composite shape you add the areas of the different shapes you have and subtract and parts removed.

Example 2: Find the area of the shape.

Show your solution in words, formula and calculations:



rectangle + parallelogram - half a circle

Rectangle: ✓

$$\begin{aligned} A &= L \times W \\ &= 24.75 \times 16 \\ &= 396 \quad \checkmark \end{aligned}$$

Parallelogram:

$$\begin{aligned} A &= b \times h \\ &= 16 \times 9 \\ &= 144 \quad \checkmark \end{aligned}$$

Half a Circle ✓

$$\begin{aligned} A &= \frac{\pi r^2}{2} \\ &= \frac{\pi (8)^2}{2} \\ &= 100.5 \end{aligned}$$

TOTAL:

$$\begin{aligned} &396 + 144 - 100.5 \\ &= 439.5 \text{ sq. inches.} \end{aligned}$$

Try: p. 71 #1-4 (Questions similar to these)



Example 3: Carpenters have constructed the frame for a house and will nail pressboard over the frame. Determine the area of pressboard they need for the back wall of the house (in metres).

SOH CAH TOA

$TAN 22 = \frac{h}{4.265}$

$4.265 \times TAN 22 = h$

$1.7 \approx h$

$5.75m$

Triangle

$A = \frac{b \times h}{2}$

$= \frac{8.53 \times 1.7}{2}$

Big Rec

$A = lw$

$= 5.75 \times 8.53$

Small Rec

$A = lw$

$= 2.1 \times 0.85$

Answer: $54.6m^2$

$1m = 39.37"$

p. 71 # 1-4, 7, 9, 12, 14

Diagram details: The house frame has a base of 8.53m. The roof is a triangle with a 22-degree angle. The height of the roof is h. The horizontal distance from the center to the edge is 4.265m. A small rectangle is shown with a height of 33.5in. and a width of 81.5in. This is divided by 39.37 to get 2.1m. Another calculation shows 39.37in is 0.85m. A conversion factor is given as 1m = 39.37in.

