Area of Composite Figures

Composite Figure - a figure made up of two or more shapes.

To find the area of a composite figure
1) Break apart the figure into simple shapes (rectangles, triangles, parallelograms, trapezoids, circles, or partial shapes of these listed)
2) Find the areas of the simple shapes
3) Sum together

Area Formulas to Know

Rectangle $A = b \times h$

Parallelogram $A = b \times h$

Triangle $A = 1/2 \times b \times h$

Trapezoid $A = 1/2 \, h \, (b_1 + b_2)$

Circle $= \pi r^2$

Height (h): is determined at the right angle of the shape.

Find the area of the figure.

Trapezoid

$$A = \frac{1}{2}h(b_1 + b_2)$$

$$= .5 \times 2.7 \times (5 + 2.8)$$
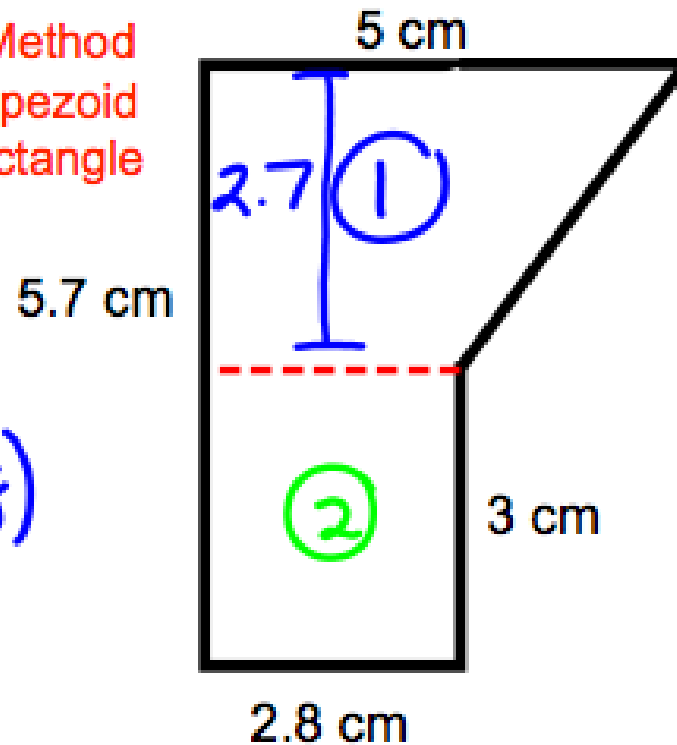
$$= .5 \times 2.7 \times 7.8$$

$$= 10.53$$

Rectangle

$$A = b \times h$$

$$= 3 \times 2.8$$

$$= 8.4$$

5 cm

2.7 ①

5.7 cm

② 3 cm

2.8 cm

Total   10.53
           + 8.4
          _____
           18.93 cm²

Find the area of the figure.

Rectangle

$A = b \times h$

$= 2.8 \times 5.7$

$= 15.96$

Triangle

$A = \frac{1}{2} bh$

$= .5 \times 2.2 \times 2.7$

$= 2.97$

5 cm

5.7 cm   ①

②

3 cm

2.8 cm

Total Area

15.96
2.97
_____
18.93 cm²

Find the area of the figure.

Circle

$A = \pi r^2$

$= \pi \times 5 \times 5$

$= 78.54 \div 2 \quad 39.27$

10 ft

①

8 ft ②

22 ft
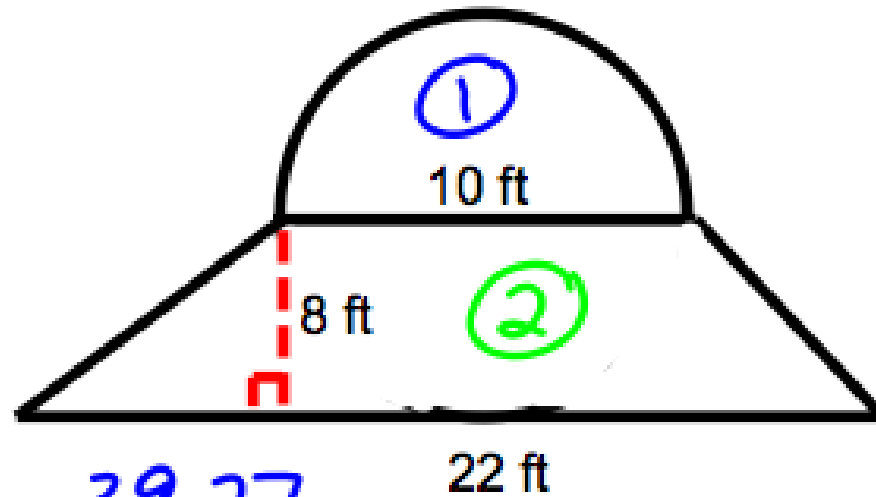
Trapezoid $A = \frac{1}{2} h (b_1 + b_2)$

$.5 \times 8 \times (10 + 22)$

$.5 \times 8 \times 32$

128

Total Area

$\begin{array}{r} 39.27 \\ 128.00 \\ \hline 167.27 \\ ft^2 \end{array}$

Find the area of the figure.

$A = \pi r^2$

$= \pi \times 2 \times 2$

$= 12.6$

$\div 4$

$\overline{3.14}$

$A = b \times h$

$= 2 \times 2$

$= 4$

$A = \frac{1}{2} bh$

$= .5 \times 2 \times 4$

$= 4$

2 in

2 in

2 in

2 in

4 in
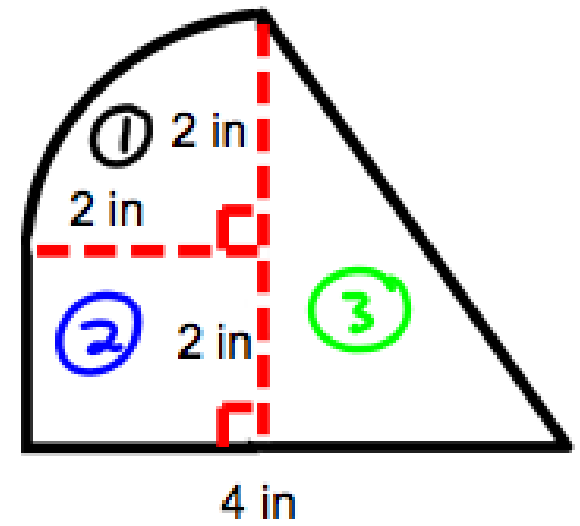
Total Area

$3.14 + 4 + 4$

11.14 in^2

Carpet costs $4 per square foot. How much will it cost to carpet this area?

14 ft

① 10 ft

3 ft

② 3 ft

③

12 ft

$$A = b \times h$$
$$= 14 \times 10$$
$$= 140$$

$$A = b \times h$$
$$= 3 \times 3$$
$$= 9$$

$$A = \frac{1}{2} bh$$
$$= .5 \times 14 \times 12$$
$$= 84$$
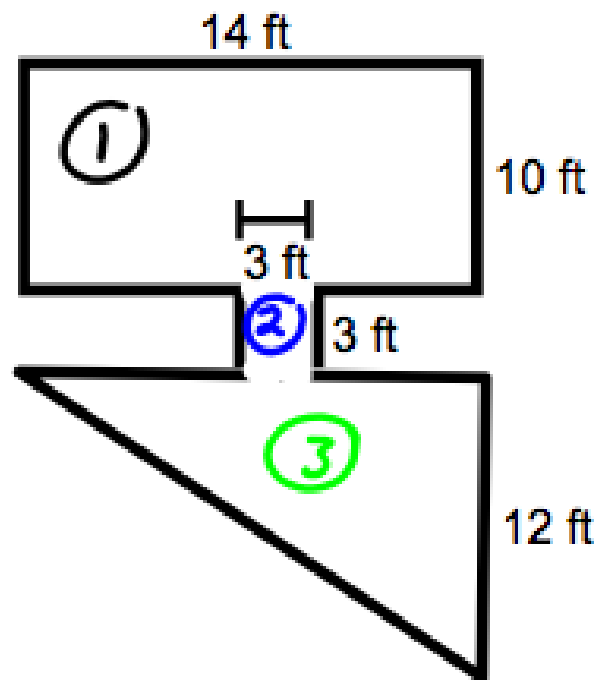
Total Area
$$140 + 9 + 84 = 233 \, ft^2$$
$$\times \, \$4$$
$$\overline{\hspace{3cm}}$$
$$\$932$$