

8.4 Area of Composite Figures p.340

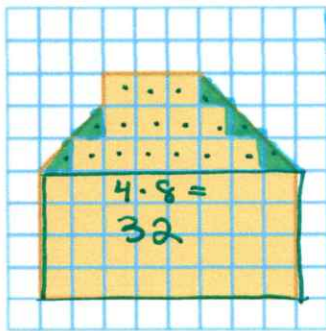
A composite figure is made up of 2 or more figures. (aka complex figures or irregular shapes)

To find the area of composite figure, separate it into shapes with areas you know how to find. Then find the **SUM** of those areas of the figures.

To find the area of a figure on grid paper, count each square that lies entirely in the square as one. $\frac{1}{2}$ squares will be counted as 0.5. We won't use other partial squares. **DON'T FORGET TO WRITE THE UNITS.**

Find the area of the shaded figure.

1.

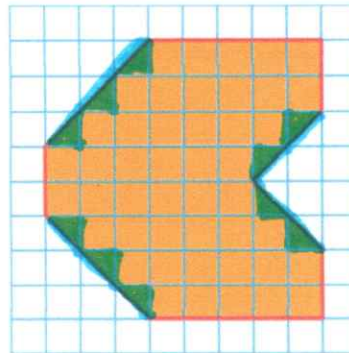


$$5(0.5) = 2.5$$

$$\begin{array}{r} 32 \\ 13 \\ 2.5 \\ \hline 47.5 \end{array}$$

$$47.5 \text{ units}^2$$

2.

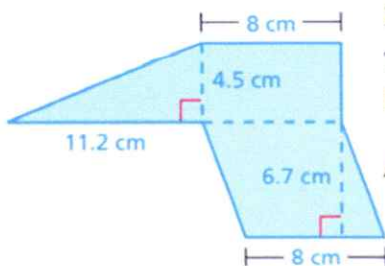


$$10(0.5) = 5$$

$$\begin{array}{r} 24 \\ 22 \\ + 5 \\ \hline 51 \end{array}$$

$$51 \text{ units}^2$$

Here's an example of a composite figure:



Find the area of the figure.

The figure is made up of a triangle, a rectangle, and a parallelogram. Find the area of each figure.

Area of Triangle

$$\begin{aligned} A &= \frac{1}{2}bh \\ &= \frac{1}{2}(11.2)(4.5) \\ &= 25.2 \end{aligned}$$

Area of Rectangle

$$\begin{aligned} A &= \ell w \\ &= 8(4.5) \\ &= 36 \end{aligned}$$

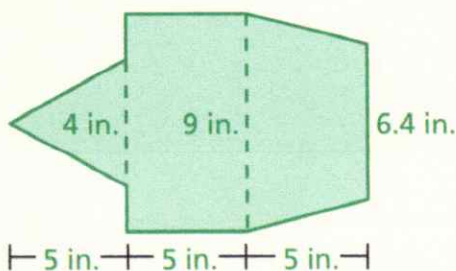
Area of Parallelogram

$$\begin{aligned} A &= bh \\ &= 8(6.7) \\ &= 53.6 \end{aligned}$$

So, the area is $25.2 + 36 + 53.6 = 114.8$ square centimeters.

Find the area of the composite figures.

1.

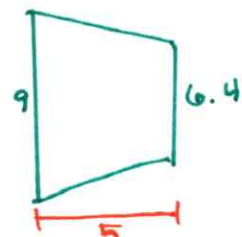


$$\frac{bh}{2} = 10$$



LW

$$9 \cdot 5 = 45$$

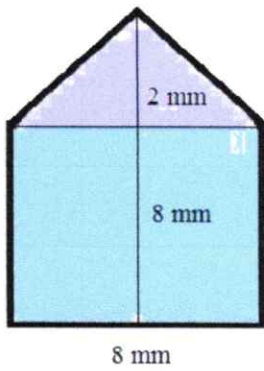


$$\frac{h(b+b)}{2}$$

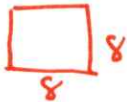
$$\frac{5(9+6.4)}{2} = 38.5$$

$$10 + 45 + 38.5 = 93.5 \text{ in}^2$$

2.



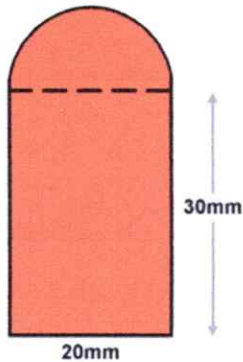
$$\frac{bh}{2} = \frac{8(2)}{2} = 8$$



$$Lw = 8 \cdot 8 = +64$$

$$\boxed{72 \text{ mm}^2}$$

4.



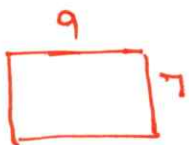
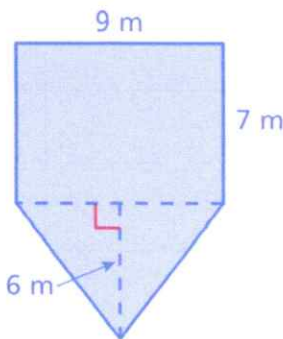
$$20(30) = 600$$



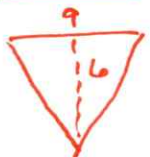
$$d=20 \quad r=10 \quad \frac{3.14(10)^2}{2} = 157$$

$$\boxed{757 \text{ mm}^2}$$

6.



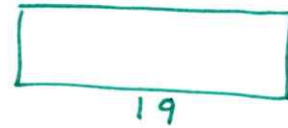
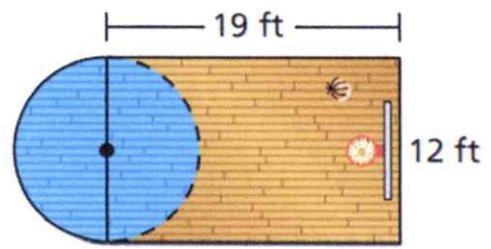
$$9 \cdot 7 = 63$$



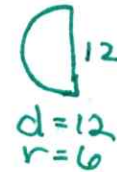
$$\frac{9(6)}{2} = +27$$

$$\boxed{90 \text{ m}^2}$$

3.



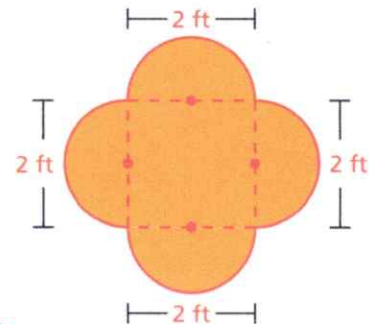
$$12 = 228$$



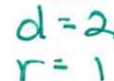
$$\frac{3.14(6)^2}{2} = 56.52$$

$$\boxed{284.52 \text{ ft}^2}$$

5.



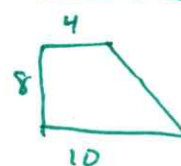
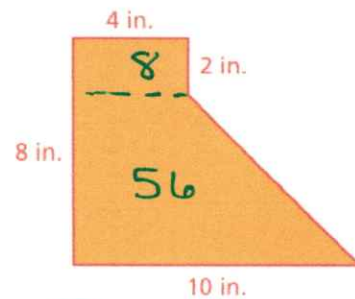
$$3.14(1)^2 = 3.14$$



$$2 \rightarrow 4$$

$$\boxed{10.28 \text{ ft}^2}$$

7.



$$\frac{h(b+b)}{2} \quad \frac{8(4+10)}{2} =$$

$$8 + 56 = \boxed{64 \text{ in}^2}$$

$$\boxed{56}$$