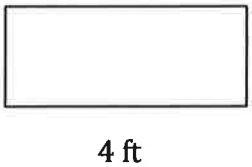
**Lesson 8-2 Notes**
**Area of Parallelograms and Triangles**

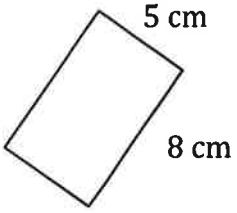
**Warm Up:**

Formula for Area of a Rectangle: length x width (l x w)

Find the area of the rectangles below.




$8 ft^2$

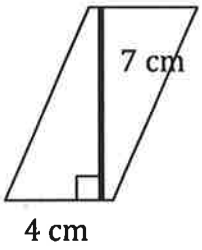


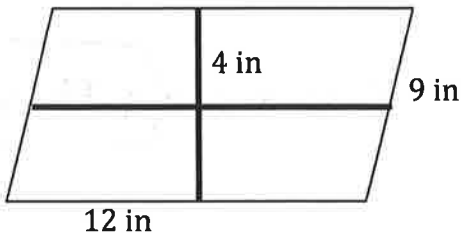

$8 \times 5 = 40$

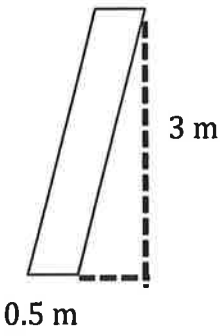
$40 cm^2$

**Area of a Parallelogram:** base x height (b x h)

List the base (b) and height (h) of each parallelogram below.




Base: 4 cm

Height: 7 cm

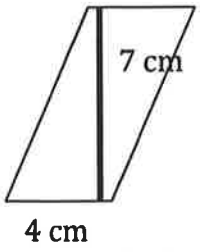
Base: 12 in

Height: 4 in

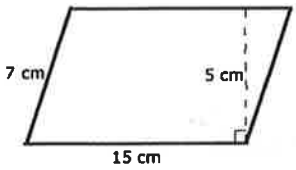
Base: 0.5 m

Height: 3 m

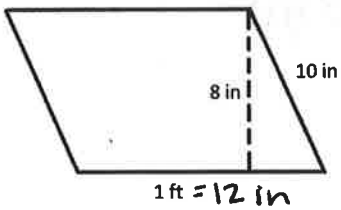
Find the area of each parallelogram.




$7 \times 4 = \boxed{28\ cm^2}$

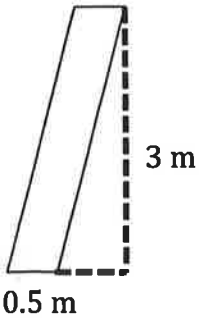



$15 \times 5 = \boxed{75\ cm^2}$

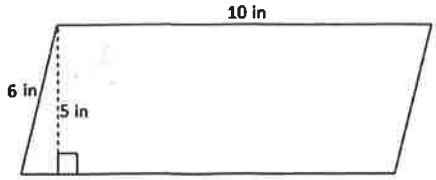



$$\begin{array}{r} {}^{1}12 \\ \times\ 8 \\ \hline \end{array}$$

$\boxed{96\ in^2}$




$0.5 \times 3 = \boxed{1.5\ m^2}$



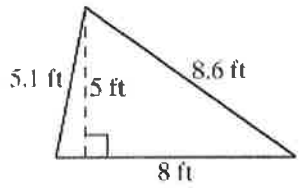

$10 \times 5 = \boxed{50\ in^2}$

**Area of a Triangle:** $\frac{1}{2}b \cdot h$

**Example:**

Find the area of each triangle.

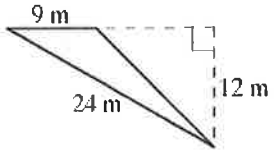
**a.**




$A = \frac{1}{2}bh$ ← Use the area formula. →
$= \frac{1}{2}(8)(5)$ ← Substitute. →
$= 20$ ← Simplify. →

The area is 20 $ft^2$.

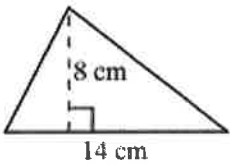
**b.**




$A = \frac{1}{2}bh$
$= \frac{1}{2}(9)(12)$
$= 54$

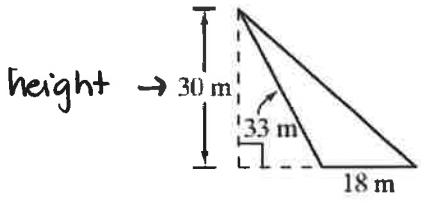
The area is 54 $m^2$.

**Find the area of each triangle. The first has been started for you.**

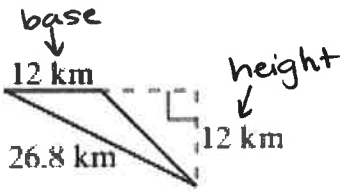



$A = \frac{1}{2}bh = \frac{1}{2}(14)(8)$

$14 \times 8 = 112$ $112\ cm^2$



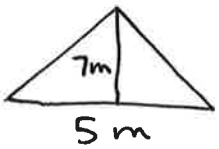

$30 \times 18 = 240 + 300 = 540$ $540\ m^2$




$12 \times 12$

$144\ km^2$

**Carpentry** A carpenter has blueprints for a wooden triangular patio. The base is 5 m and the height is 7 m. What is the area of the patio?




$5 \times 7 = 35\ m^2$