

Name: \_\_\_\_\_

KEY

Date: \_\_\_\_\_

# AREA OF TRIANGLES

## GEOMETRY

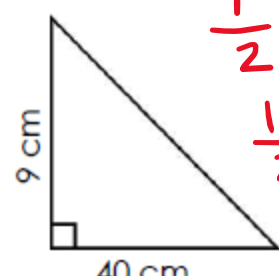
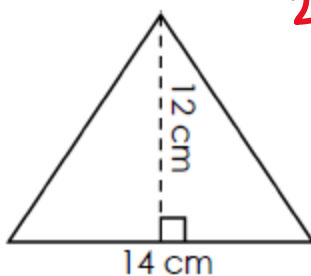
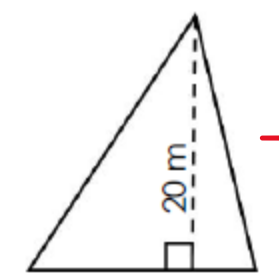
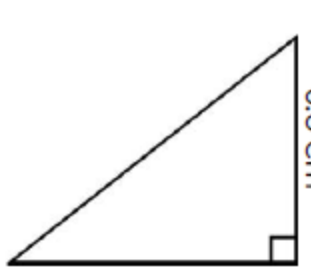
### VOCABULARY

- **Area:** The number of square units contained in a figure.
- **Perpendicular Lines:** Lines that form a 90° angle.

### GUIDED NOTES:

1. To find the area of a triangle, MULTIPLY the base by the height, then divide by two.
2. Another way this can be written is:  $\frac{1}{2}$  of base  $\times$  height
3. The algebraic formula is:  $A = \frac{b \cdot h}{2}$  or  $A = \frac{1}{2} \cdot b \cdot h$
4. The base and height are perpendicular to each other.
5. Right angles measure 90 degrees

### GUIDED PRACTICE:

<p>Find the area:</p>  <p><math>\frac{1}{2} (9 \cdot 40)</math>  <math>\frac{1}{2} (360)</math>  <math>\frac{180}{1}</math></p>	<p>Find the area:</p>  <p><math>\frac{1}{2} (12 \times 14)</math>  <math>\frac{84}{1}</math>  <math>2 \overline{)168}</math>  <math>\underline{-16}</math>  <math>08</math>  <math>\underline{-8}</math>  <math>0</math></p>
<p>Find the area:</p>  <p><math>\frac{1}{2} (22 \cdot 20)</math>  <math>\frac{220}{1}</math>  <math>2 \overline{)440}</math>  <math>\underline{-4}</math>  <math>04</math>  <math>\underline{-4}</math>  <math>00</math></p>	<p>Find the area:</p>  <p><math>\frac{1}{2} (22.2 \times 6.3)</math>  <math>\frac{69.93}{1}</math>  <math>2 \overline{)139.86}</math>  <math>\underline{-12}</math>  <math>19</math>  <math>\underline{-18}</math>  <math>06</math>  <math>\underline{-6}</math>  <math>00</math></p>

$$\begin{array}{r} 22 \\ \times 20 \\ \hline 440 \\ \hline 440 \end{array}$$

$$\begin{array}{r} 220 \\ 2 \overline{)440} \\ \underline{-4} \\ 04 \\ \underline{-4} \\ 00 \end{array}$$

$$\begin{array}{r} 14 \\ \times 12 \\ \hline 28 \\ 140 \\ \hline 168 \end{array}$$

# AREA OF TRIANGLES

## PRACTICE PROBLEMS:

**1** What is the area of a triangle with a base of 6 m and a height of 7 m?

$$\frac{1}{2} (6 \cdot 7)$$

$$\frac{1}{2} (42)$$

$$\begin{array}{r} 21 \\ 2 \overline{)42} \\ \underline{-4} \phantom{0} \\ 02 \\ \underline{-2} \\ 0 \end{array}$$

**2** What is the area of a triangle with a base of 10 cm and a height of 40 cm?

$$\frac{1}{2} (10 \cdot 40)$$

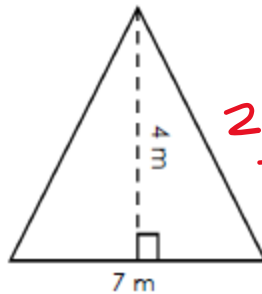
$$\frac{1}{2} (400) = 200$$

**3** What is the area of a triangle with a base of 14.5 cm and a height of 7.1 cm?

$$\frac{1}{2} (14.5 \cdot 7.1)$$

$$\begin{array}{r} 14.5 \\ \times 7.1 \\ \hline 145 \\ 10150 \\ \hline 102.95 \end{array}$$

**4** Find the area of the figure below:

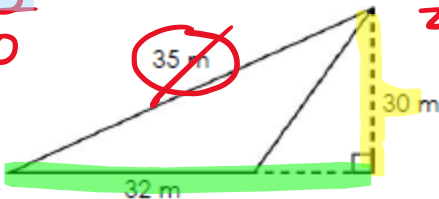


$$\begin{array}{r} 14 \\ 2 \overline{)28} \\ \underline{-2} \phantom{0} \\ 08 \\ \underline{-8} \\ 0 \end{array}$$

$$\frac{1}{2} (4 \cdot 7)$$

$$\frac{1}{2} (28)$$

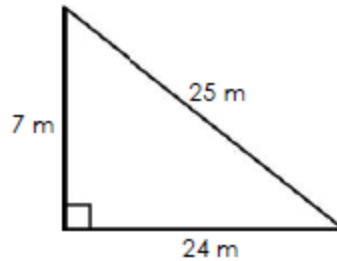
**5** Find the area of the figure below:



$$\frac{1}{2} (32 \cdot 30)$$

$$\begin{array}{r} 32 \\ \times 30 \\ \hline 00 \\ 960 \\ \hline 960 \end{array}$$

**6** Find the area of the figure below:



$$\begin{array}{r} 84 \\ 2 \overline{)168} \\ \underline{-16} \phantom{0} \\ 08 \\ \underline{-8} \\ 0 \end{array}$$

$$\frac{1}{2} (24 \cdot 7)$$

$$\begin{array}{r} 24 \\ \times 7 \\ \hline 168 \end{array}$$

**7** Susan is making a quilt using triangular shaped pieces. Each triangle piece has a base of 5 inches and a height of 6 inches. If Susan needs to cut 20 identical triangles, what is the total amount of fabric she needs?

$$\frac{1}{2} (5 \cdot 6)$$

$$\frac{1}{2} (30) = 15$$

one triangle

$$\begin{array}{r} 15 \\ \times 20 \\ \hline 300 \\ 300 \\ \hline 300 \end{array}$$

$$300 \text{ in}^2$$