Name Key Date ONE

# Area of Squares, Rectangles & Triangles

## WARM UP

Skill : Identifying shapes

1. Describe the characteristics of a square.

- equal angles (90°)
- equal side lengths
- parallel sides

2. What are the similarities and differences between squares and rectangles?

- rectangles do not have 4 equal sides.
- Both have four 90° angles
- Both have parallel sides

3. How does a triangle relate to a rectangle?

A triangle is half of a square or rectangle

4. What kind of triangle has three equal sides and three equal angles?

Equilateral

Name Key Date TWO

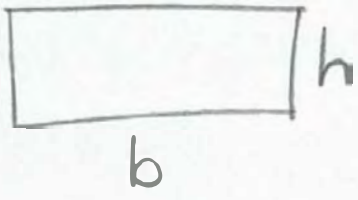
# Area of Squares, Rectangles & Triangles

## WARM UP

Skill : Area of squares and rectangles

1. Explain how you find the area of a rectangle.

Multiply the base and the height.




2. A rectangle is 15 inches long and 12.5 inches wide. What is the area of the rectangle?

$15 \times 12.5$

$187.5 \text{ in.}^2$

3. Explain how you find the area of a square and why it is different than finding the area of a rectangle.

Since the sides are equal, you can use $A = b \times h$ or $A = s^2$. For a rectangle, you can only use $A = b \times h$

4. A square has 4.5 centimeter sides. What is the area?

$4.5 \times 4.5$

$20.25 \text{ cm}^2$

Name Key Date THREE

# Area of Squares, Rectangles & Triangles

## WARM UP

Skill : Area of squares, rectangles and triangles.

1. How do you find the length of a rectangle when you are given the total area and the width?

Divide the area by the width.

2. How do you find the area of a triangle and how does it relate to finding the area of a rectangle?

Area = $\frac{1}{2} \times b \times h$.

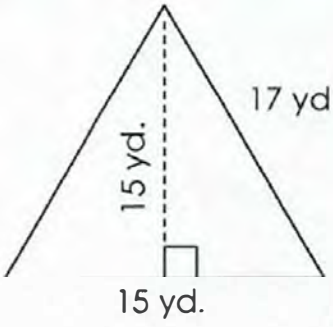
Since a triangle is half of a rectangle, the area is found by dividing b×h in half

3. Find the area of a triangle that has a base of 12 inches and a height of 10 inches.

$\frac{1}{2} \times 12 \times 10$

$60 \text{ in.}^2$

4. Find the area.




$\frac{1}{2} \times 15 \times 15$

$112.5 \text{ yd}^2$

Name Key Date _____

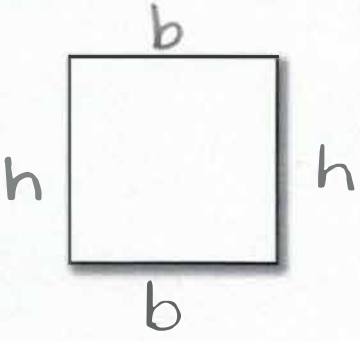
# Area of Squares and Rectangles

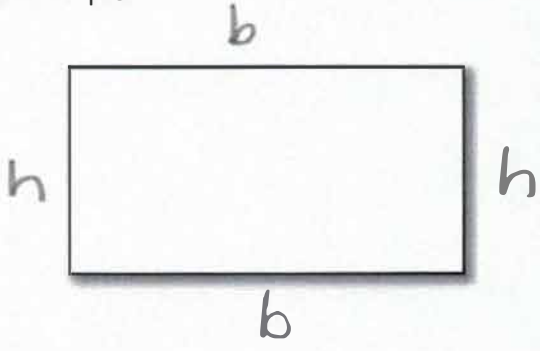
## NOTES

**Key Terms :**

- Base – The bottom edge of a shape
- Height – The distance from the top to bottom edge

**Label it :** Label the base and height on each shape.



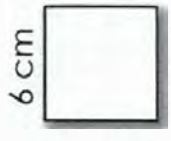

**Calculate it :**

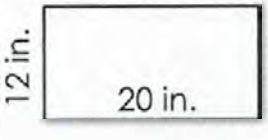
The formula for finding the area of each shape is :

| Squares : | Rectangles : |
|---|---|
| $A = b \cdot h$ OR $A = s^2$ | $A = b \cdot h$ OR $A = s^2$ |
| (b = base, h = height, s = side) | (b = base, h = height) |

**Try it :**

Find the area of each shape.




Area = $6 \times 6 = 36\ cm^2$

Area = $12 \times 20 = 240\ in.^2$

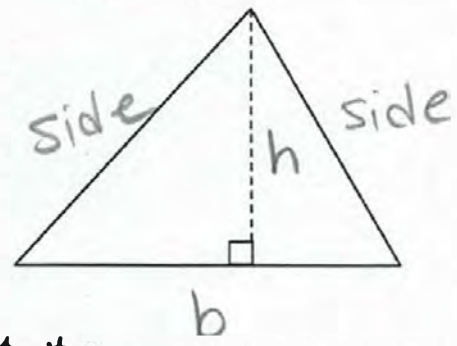
Name Key Date

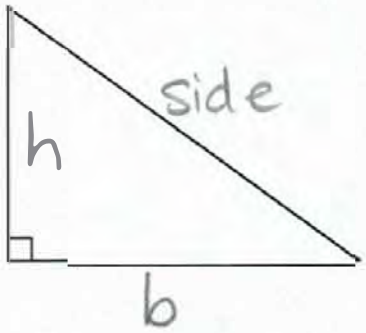
# Area of Triangles NOTES

**Key Terms :**

- Base – The bottom edge of a shape
- Height – The distance from the base to the highest vertex.

**Label it :** Label the base and height on each shape.




**Calculate it :**

The formula for finding the area of a triangle is :

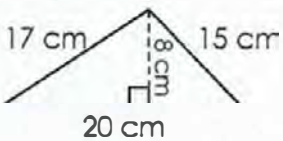
**Triangles :** $A = \frac{1}{2} b \cdot h$

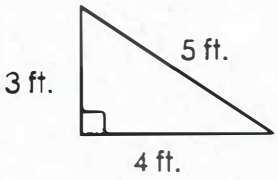
(b = base, h = height)

The area of a triangle is half the area of a rectangle because a triangle is made from half a rectangle.

**Try it :**

Find the area of each shape.




Area = $\frac{1}{2} \times 20 \times 8 = 80 cm^2$

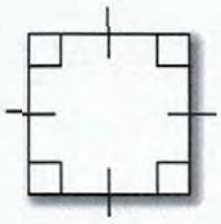
Area = $\frac{1}{2} \times 3 \times 4 = 6 ft.^2$

Name Key Date _____

# Area of Squares and Rectangles

## PRACTICE

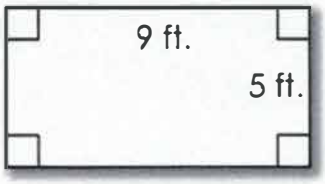
1.




12 × 12

Area = 144 in.²

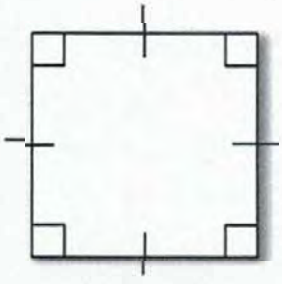
2.




9 × 5

Area = 45 ft.²

3.




13 × 13

Area = 169 m²

4.


40 × 9

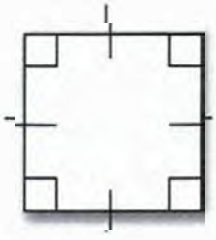
Area = 360 cm²

5.


12 × 28

Area = 336 in.²

6.



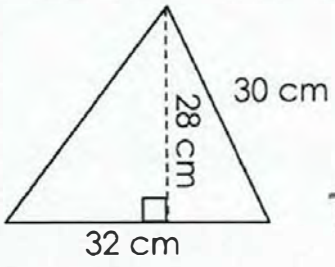

8 × 8

Area = 64 yds.²

Name Key Date

# Area of Triangles PRACTICE

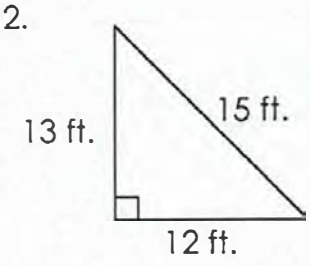
1.




$\frac{1}{2} \times 32 \times 28$

Area = 448 $cm^2$

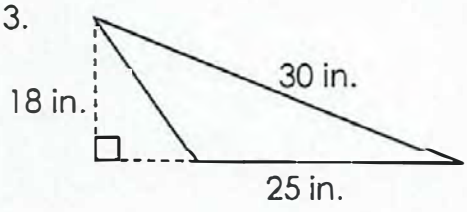
2.




$\frac{1}{2} \times 12 \times 13$

Area = 78 $ft.^2$

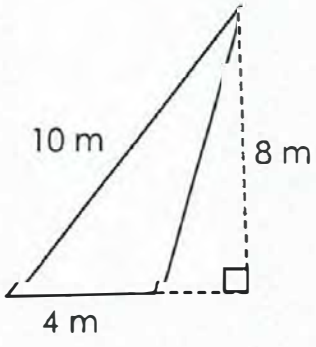
3.




$\frac{1}{2} \times 25 \times 18$

Area = 225 $in.^2$

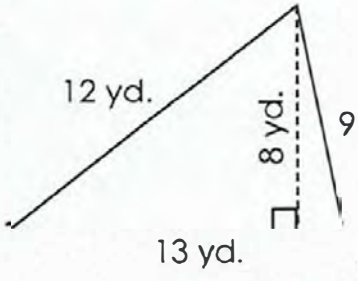
4.




$\frac{1}{2} \times 8 \times 4$

Area = 16 $m^2$

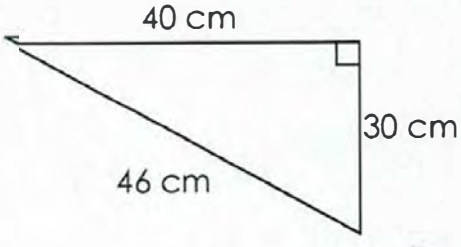
5.




$\frac{1}{2} \times 13 \times 8$

Area = 52 $yd.^2$

6.




$\frac{1}{2} \times 30 \times 40$

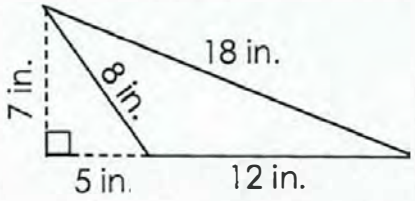
Area = 600 $cm^2$

Name Key Date

# Area of Triangles & Rectangles

## ERROR ANALYSIS

1. Two students found the area of the given triangle and they each came up with a different answer. Identify who is correct and which error(s) was made by the student who was incorrect.

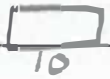



| EMMITT | HAZEL |
|---|---|
| ½ • 17 • 7<br>59.5 inches² | ½ • 12 • 7<br>42 inches² |

Hazel is correct.
Emmitt multiplied the height by the base plus the distance to the height line.

2. Tavaris believes that he is able to use the formula $A = s^2$ when finding the area of a rectangle and a square since the formula A = b x h is able to be used for finding the area of a square and a rectangle. Is he correct? Explain why or why not and give an example.

He is not correct because a rectangle doesn't have equal side lengths

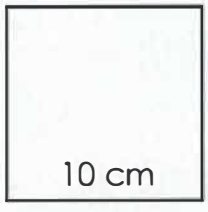



$6 \times 10 \neq 6^2$

$6 \times 10 \neq 10^2$


$10^2 = 10 \times 10$

3. Two students found the area of the given shape and they each came up with a different answer. Identify who is correct and which error(s) was made by the student who was incorrect.




| GAVIN | MASON |
|---|---|
| 10 • 10<br>100 cm² | 2 • 10<br>20 cm² |

Gavin is correct.
Mason multiplied $10 \times 2$ instead of $10^2$