

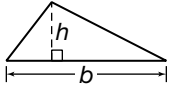
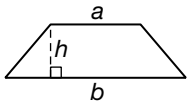


Name _____ Date _____

Area of Triangles and Trapezoids

(Pages 301–304)

Any side of a triangle can be used as a **base**. A line segment perpendicular to the base from the opposite vertex is the **altitude**. The length of the altitude is called the **height**. A **trapezoid** is a quadrilateral with exactly one pair of parallel sides. These parallel sides are its bases.

Finding the Area of a Triangle	The area of a triangle is equal to half the product of its base and height. $A = \frac{1}{2}bh$	
Finding the Area of a Trapezoid	The area of a trapezoid is equal to the product of half the height and the sum of the bases. $A = \frac{1}{2}h(a + b)$	

EXAMPLES

A Find the area of a triangle that has $b = 14$ in. and $h = 5$ in.

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

$$A = \frac{1}{2}(14)(5) \text{ Replace } b \text{ with } 14 \text{ and } h \text{ with } 5.$$

$$A = 35 \text{ in}^2 \text{ Multiply.}$$

B Find the area of a trapezoid with bases of 13 cm and 17 cm and a height of 9 cm.

$$A = \frac{1}{2}h(a + b)$$

$$A = \frac{1}{2}(9)(13 + 17) \text{ Replace the variables.}$$

$$A = 135 \text{ cm}^2 \text{ Multiply.}$$

Try These Together

1. Find the area of a triangle that has $b = 16$ yd and $h = 12$ yd.

HINT: Use the formula and replace the variables.

2. Find the area of a trapezoid that has bases of 10.5 m and 12.3 m and a height of 4.1 m.

HINT: Use $A = \frac{1}{2}h(a + b)$ and replace with the measures you know.

PRACTICE

Find the area of each triangle.

	base	height
3.	16 cm	7 cm
4.	$15\frac{1}{3}$ ft	6 ft
5.	20 cm	22 cm

Find the area of each trapezoid.

	base (a)	base (b)	height
6.	14 in.	18 in.	6 in.
7.	$20\frac{1}{2}$ m	$7\frac{1}{2}$ m	12 m
8.	8.6 yd	5.2 yd	7 yd



9. **Standardized Test Practice** What is the area of a triangle whose base is 4.5 m and whose height is 3.6 m?

A 5.3 m^2

B 8.1 m^2

C 10.6 m^2

D 16.2 m^2

Answers: 1. 96 yd^2 2. 46.74 m^2 3. 56 cm^2 4. 46 ft^2 5. 220 cm^2 6. 96 in^2 7. 168 m^2 8. 48.3 yd^2 9. B