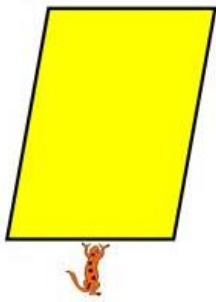
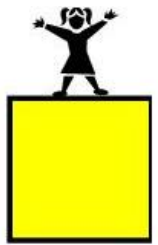


Name: \_\_\_\_\_

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



# Area of Parallelograms



## Classification of Quadrilaterals

Shape	Characteristic	Name
	No sides parallel	Quadrilateral
	Exactly one pair of parallel sides	Trapezoid
	Two pairs of parallel sides	Parallelogram
	Parallelogram with congruent sides	Rhombus
	Parallelogram with right angles	Rectangle
	Rhombus w/ 4 right angles Rectangle with congruent sides	Square

Note that squares, rectangles, and rhombuses are types of parallelograms and that a square is a type of rectangle and a type of rhombus.

### Area of Rectangles and Squares

$$A = lw$$

Rectangle



$$P = 18 \text{ units}$$

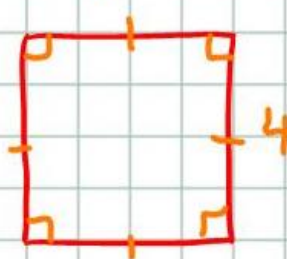
$$A = 18 \text{ units}^2$$

18 sq. units

$$P_{\square} = 2l + 2w$$

$$P_{\square} = 2(l + w)$$

Square



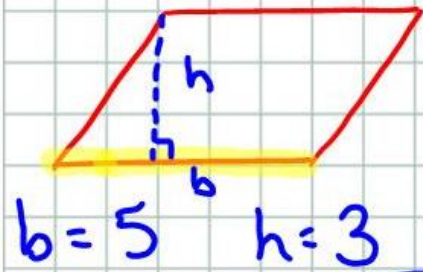
$$P = 16 \text{ units}$$

$$A = 16 \text{ units}^2$$

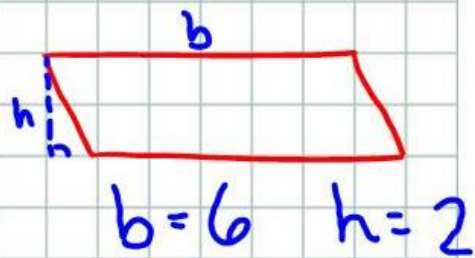
$$P = 4s \quad A = s^2$$

Area of Parallelograms

$$A = bh$$



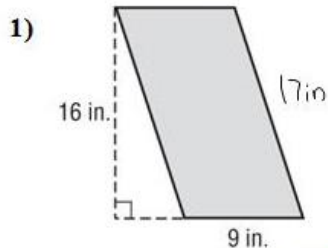
$$A = 5(3) = 15 \text{ units}^2$$



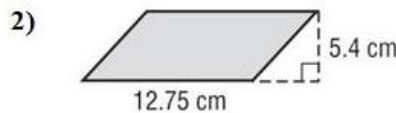
$$A = 12 \text{ units}^2$$

height = perpendicular distance between the two bases!

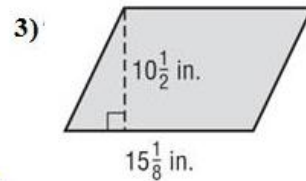
Find the area of the parallelogram.



$$A = 9(16) = 144 \text{ in}^2$$



$$A = 5.4(12.75)$$



$$A = 10\frac{1}{2} \left(15\frac{1}{8}\right) = \frac{21}{2} \times \frac{121}{8}$$

4) Find the base of a parallelogram with an area of 18 square inches and a height of 2 inches.

$$A = bh \quad \frac{18}{2} = \frac{2b}{2} \quad b = 9 \text{ in}$$

5) Find the height of a parallelogram with an area of 63 square yards and base 9 yards.

$$A = bh \quad 63 = 9h \quad h = 7 \text{ yd}$$

6) Find the height of a parallelogram with an area of 41 square meters and base 8.2 meters.

$$A = bh \quad \frac{41}{8.2} = \frac{8.2h}{8.2} \quad 8.2 \overline{)410} \quad h = 5 \text{ m}$$