

Name: _____ Per: _____

10-2 Area of Trapezoids/Rhombus/Kite

Warm-up

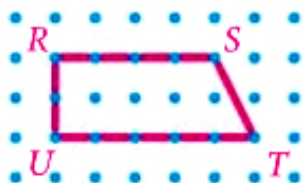
Write the formula for the area of each type of figure.

1. a rectangle

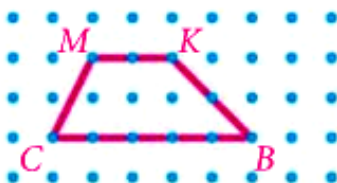
2. a triangle

Find the area of each trapezoid by using the formulas for area of a rectangle and area of a triangle.

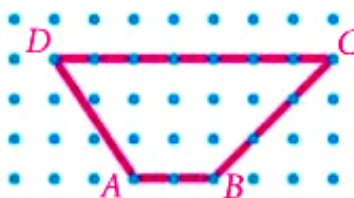
3.



4.



5.

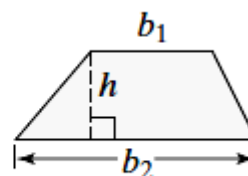


Notes

Area of a Trapezoid

The area of a trapezoid is _____

$A =$



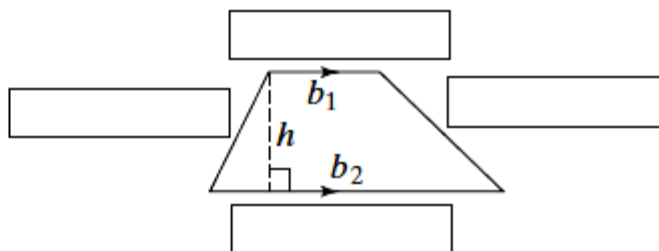
Area of a Rhombus or a Kite

The area of a rhombus or a kite is _____

$A =$

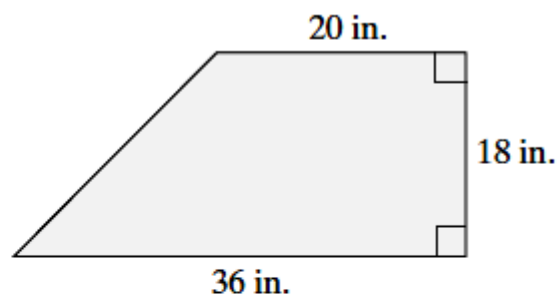


The height of a trapezoid is _____



Example:

Applying the Area of a Trapezoid A car window is shaped like the trapezoid shown. Find the area of the window.



$$A = \frac{1}{2}h(b_1 + b_2)$$

Area of a

$$A = \frac{1}{2}(\text{ })(\text{ } + \text{ })$$

Substitute for h , for b_1 , and for b_2 .

$$A = \text{ }$$

Simplify.

The area of the car window is in.^2 .

Example:

Finding the Area of a Kite Find the area of kite $XYZW$.
Find the lengths of the diagonals of kite $XYZW$.

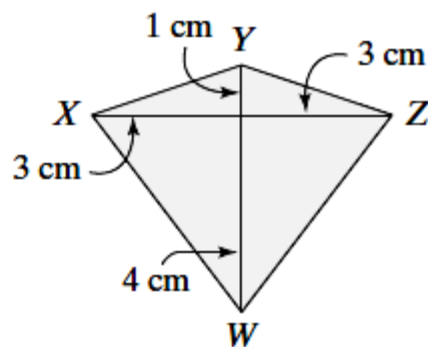
$$XZ = d_1 = \text{ } + \text{ } = \text{ } \text{ and } YW = d_2 = \text{ } + \text{ } = \text{ }$$

$$A = \frac{1}{2} \text{ } \text{ } \quad \text{Use the formula for the area of a kite.}$$

$$A = \frac{1}{2}(\text{ })(\text{ }) \quad \text{Substitute for } d_1 \text{ and for } d_2.$$

$$A = \text{ } \quad \text{Simplify.}$$

The area of kite $XYZW$ is cm^2 .

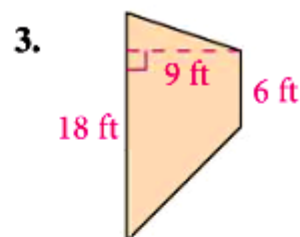
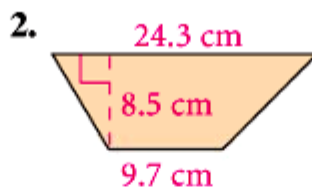
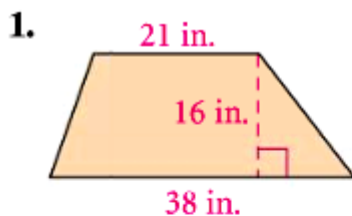
**Example:**

Find the area of a trapezoid with height 7 cm and bases 12 cm and 15 cm.

Find the area of a kite with diagonals that are 12 in. and 9 in. long.

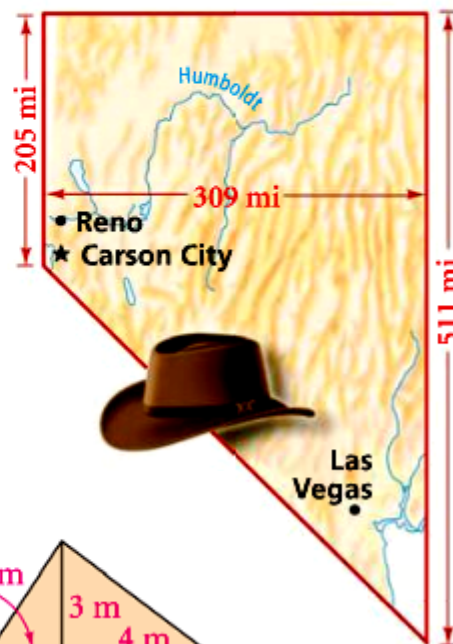
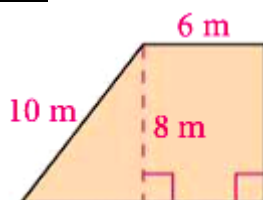
Assignment:

Find the area of each trapezoid.



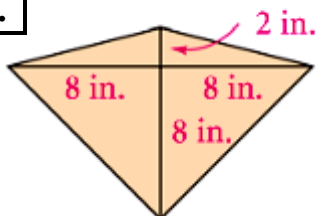
4. **Geography** Approximate the area of Nevada by finding the area of the trapezoid shown.

5.

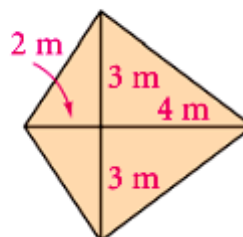


Find the area of each kite.

6.

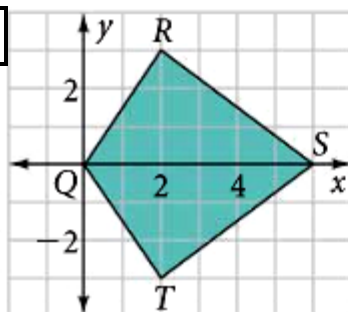


7.



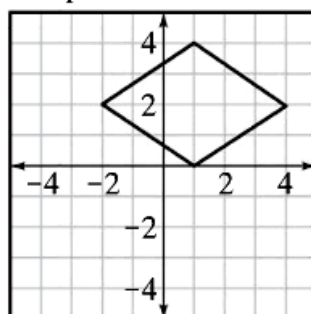
Coordinate Geometry In Exercise 8., find the area of quadrilateral $QRST$.

8.



Compute the area of the rhombus below.

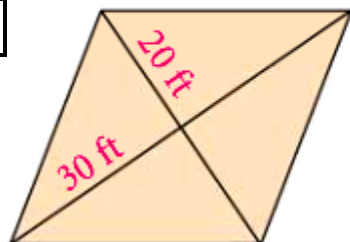
9.



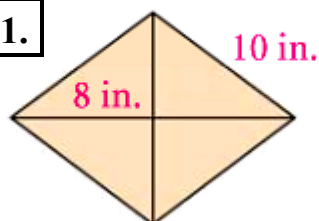
- ☐ A 9 units²
☐ B 10 units²
☐ C 12 units²
☐ D 13 units²

Find the area of each rhombus.

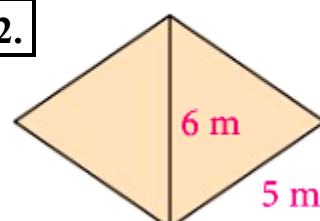
10.



11.

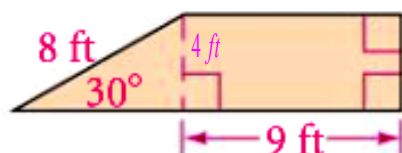


12.

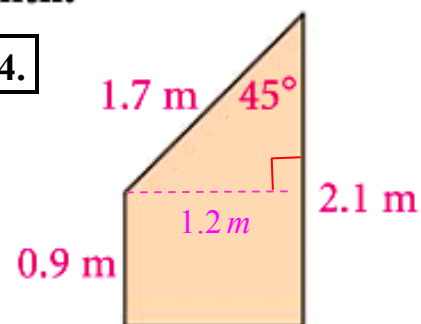


Find the area of each trapezoid to the nearest tenth.

13.

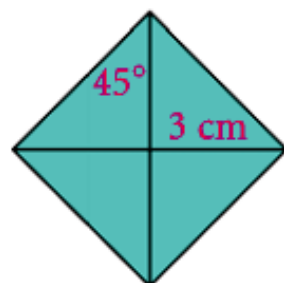


14.



Find the area of each rhombus. Leave your answer in simplest radical form.

15.



16.

