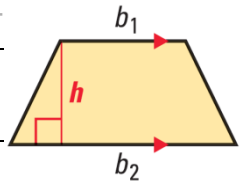
Geometry

11.2 Areas of Trapezoids, Rhombuses, and Kites (11.3)

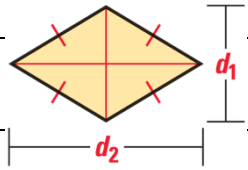
Area of a Trapezoid

A =_____ Where ___ is the _____ and ___ and ___ are the _____.



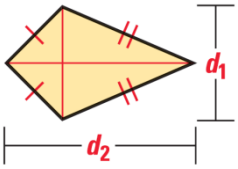
Area of a Rhombus

A =_____ Where ___ and ___ are the _____.

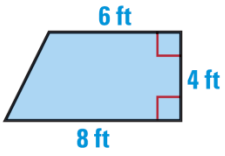


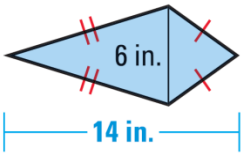
Area of a Kite

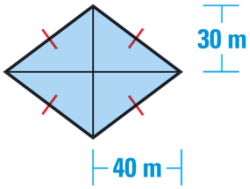
A =_____ Where ___ and ___ are the _____.



Find the area

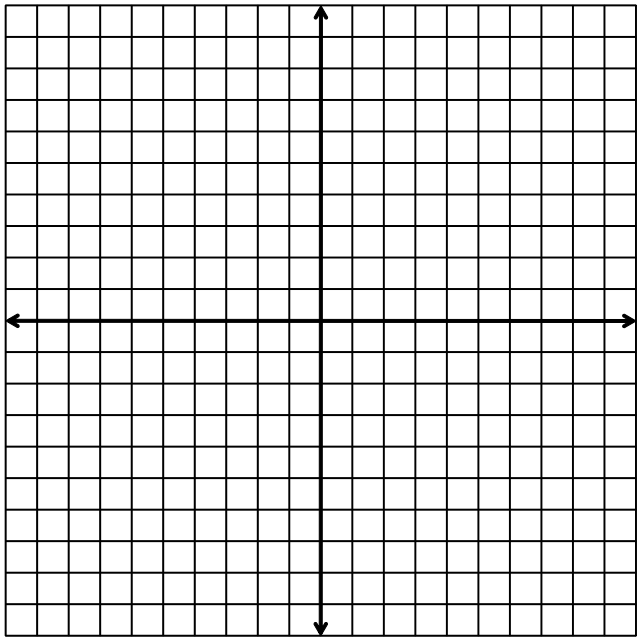






The area of a kite is 80 ft². One diagonal is 4 times as long as the other. Find the diagonal lengths.

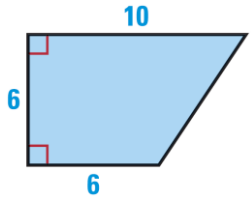
Find the area of a rhombus with vertices M(1, 3), N(5, 5), P(9, 3) and Q(5, 1).



Assignment: Attached worksheet

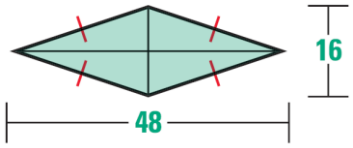
Assignment:

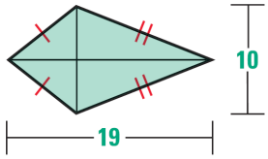
Find the area of the trapezoid.

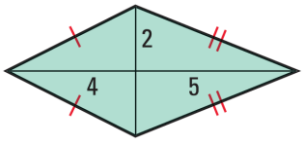
1. 

2. The lengths of the bases of a trapezoid are 5.4 centimeters and 10.2 centimeters. The height is 8 centimeters. Draw and label a trapezoid that matches this description. Then find its area.

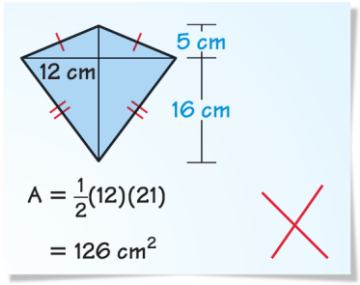
Find the area of the rhombus or kite.

3. 

4. 

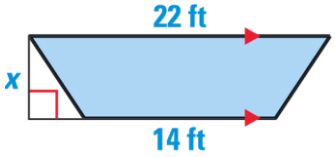
5. 

Describe and correct the error in finding the area.

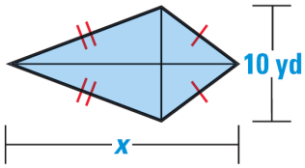
6. 

Use the given information to find the value of *x*.

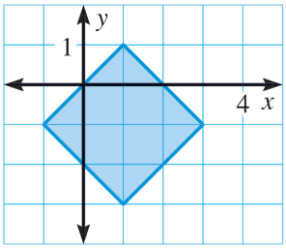
7. Area = 108 ft²



8. Area = 100 yd²



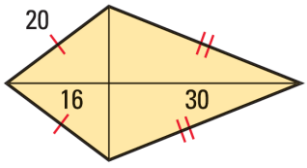
Find the area of the figure.

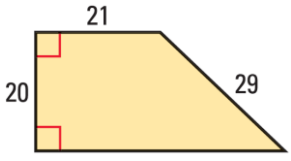
9. 

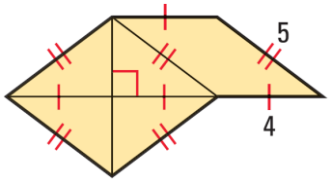
Find the lengths of the bases of the trapezoid described.

10. The height is 3 feet. One base is twice as long as the other base. The area is 13.5 square feet.

Find the area of shaded region.

11. 

12. 

13. 

14. How is the area of a trapezoid affected if you double the height but keep the lengths of the bases unchanged? If you keep the height unchanged but double the lengths of the bases? *Explain*.

Sketch the figure. Then determine its perimeter and area.

15. The figure is a rhombus. Its side length is 13. The length of one of its diagonals 24.
16. The windshield in a truck is in the shape of a trapezoid. The lengths of the bases of the trapezoid are 70 inches and 79 inches. The height is 35 inches. Find the area of the glass in the windshield.
17. You are designing a wall hanging that is in the shape of a rhombus. The area of the wall hanging is 432 square inches and the length of one diagonal is 36 inches. Find the length of the other diagonal.

Mixed Review

Solve for the indicated variable. Write a reason for each step.

18. $d = rt$; solve for t
19. $P = 2\ell + 2w$; solve for w
20. In the diagram at the right, $\triangle PQR \sim \triangle STU$. The perimeter of $\triangle STU$ is 81 inches. Find the height h and the perimeter of $\triangle PQR$.