

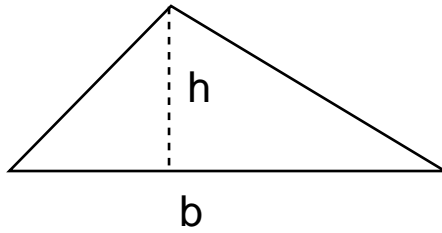
Heatherwood Mathletes
Green and Orange Belt Home Exercises
February 26, 2004

Rectangle



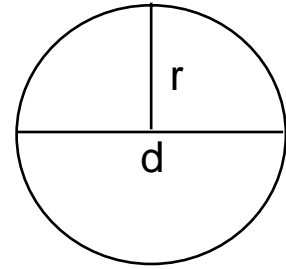
Perimeter: $2h + 2w$

Triangle



Sum of the angles inside a triangle is 180 degrees.

Circle

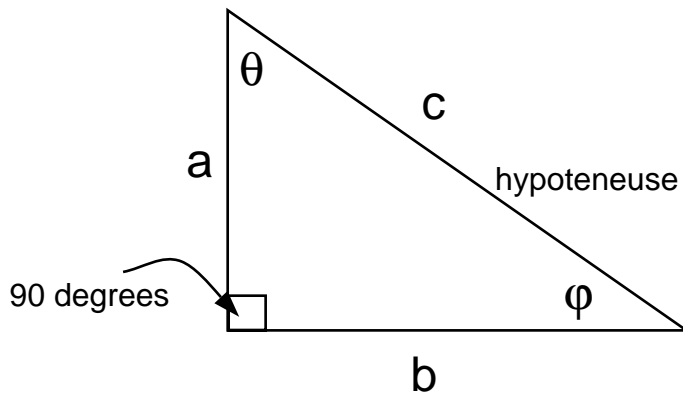


Circumference: $\pi d = 2\pi r$

$\pi = 3.14\dots$

Units: length (for example, inches, feet, meters, centimeters, etc.)

Right Triangles:

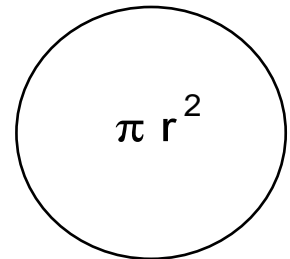
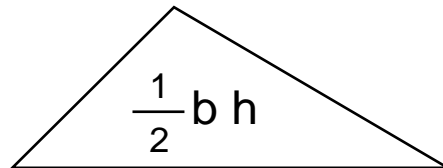
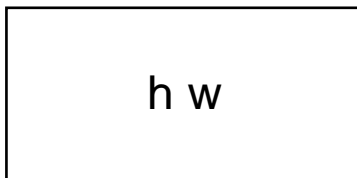


$\theta + \phi = 90$ degrees

$a^2 + b^2 = c^2$

Pythagorean Theorem

Area



Units: length - squared (for example, inches-squared or square inches, feet-squared or square feet, meters-squared or square meters, centimeters-squared or square centimeters, etc.)

4. Consider rectangles whose length and width are restricted to whole numbers of feet. How many rectangles of different shape have a perimeter of 10 feet? How many rectangles of different shape have a perimeter of 16 feet?

Circumference

5. The diameter of the wheel for a toy car is 2 inches. What is the wheel's circumference?
6. How far will the car in problem number 5 travel if the wheel turns just one complete revolution?

7. The minute hand of a clock is 5 inches long. How far does the tip of the minute hand travel in 1 hour?

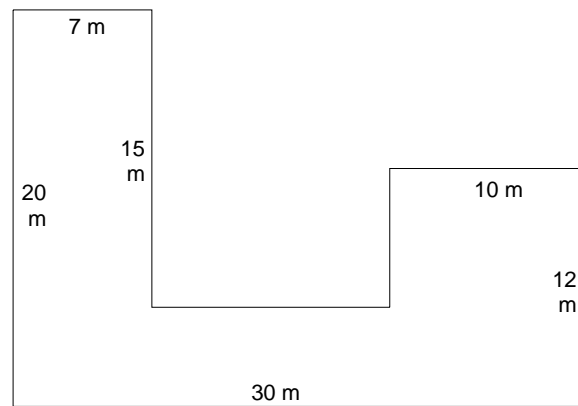
Area

8. A rectangle has a length of 8 meters and a width of 6 meters. What is its area?

9. Imagine a square garden that has the same area as the garden in problem number 1. What will be the length of the sides of the square garden?

10. What is the area of a circle whose radius is 10 inches?

11. Find the area of the floor in the following floor plan.



12. To make a pizza pan, a tinsmith is planning to cut the largest possible circular disk from a square sheet of tin that measures 20 inches on each side as shown in the following figure. What will be area of the leftover scraps of tin?

