

Section 2.6: PROBLEM SOLVING IN GEOMETRY

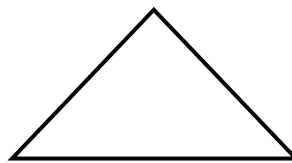
When you are done with your homework you should be able to...

- π Solve problems using formulas for perimeter and area
- π Solve problems using formulas for a circle's area and circumference
- π Solve problems using formulas for volume
- π Solve problems involving the angles of a triangle
- π Solve problems involving complementary and supplementary angles

WARM-UP:

Solve:

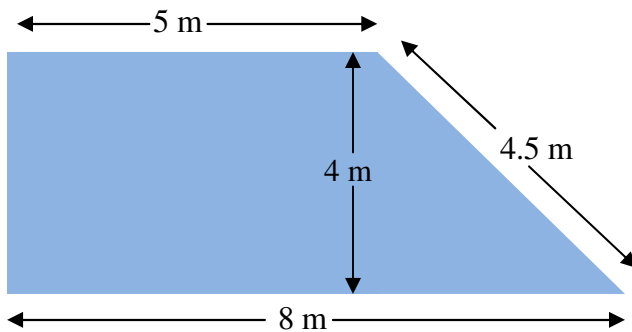
After a 30% reduction, you purchase a DVD player for \$98. What was the selling price before the reduction?

COMMON FORMULAS FOR PERIMETER AND AREA

Example 1: Solve.

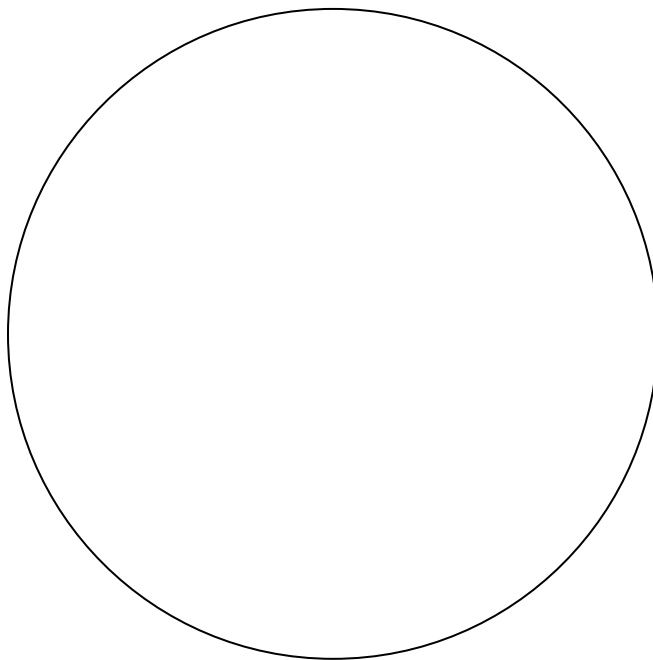
1. A triangle has a base of 6 feet and an area of 30 square feet. Find the triangle's height.
2. A rectangle has a width of 46 cm and a perimeter of 208 cm. What is the rectangle's length?

3. Find the area of the trapezoid.



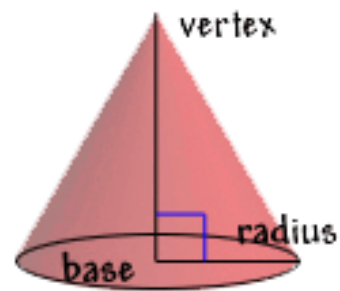
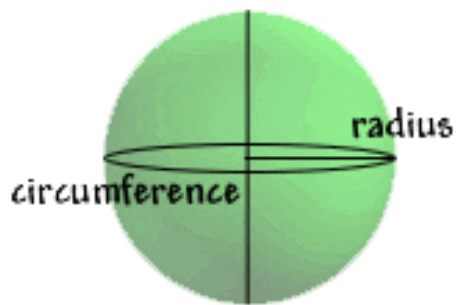
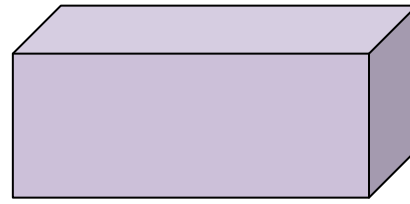
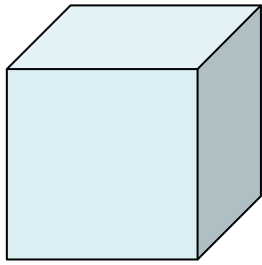
GEOMETRIC FORMULAS FOR CIRCUMFERENCE AND AREA OF A CIRCLE

A _____ is the set of all _____ in the _____ equally distant from a given point, its _____. A _____ (plural _____), _____, is a line _____ from the _____ to any point on the _____. For a given circle, _____ radii have the same _____. A _____, _____, is a _____ segment through the _____ whose endpoints both lie on the _____. For a given circle, all _____ have the _____ length. In any circle, the length of a _____ is _____ the length of a _____ and the length of a _____ is _____ the length of a _____.



Area

Circumference



Example 3: Solve.

1. Solve the formula for the volume of a cone for h .

2. A cylinder with radius 2 inches and height 3 inches has its radius quadrupled. How many times greater is the volume of the larger cylinder than the smaller cylinder?

3. Find the volume of a shoebox with dimensions 6 in x 12 in x 5 in.

THE ANGLES OF TRIANGLES

An _____, symbolized by _____, is made up of two _____ that have a common _____. The common endpoint is called the _____. The two rays that form the angle are called its _____.

One way to _____ angles is in _____, symbolized by a small, raised _____. There are _____ in a circle. _____ is _____ of a complete rotation.

THE ANGLES OF A TRIANGLE

The _____ of the _____ of the three angles of _____ triangle is _____.

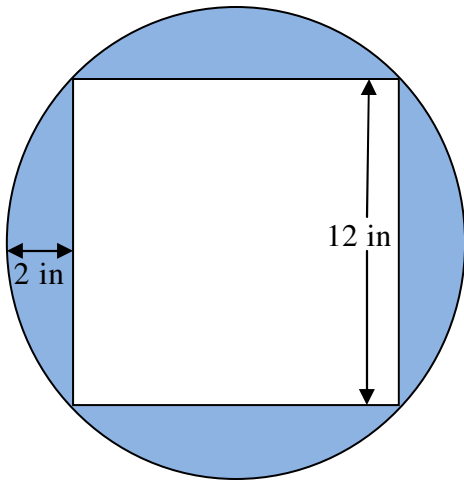
COMPLEMENTARY AND SUPPLEMENTARY ANGLES

Two angles with measures having a _____ of _____ are called _____ angles. Two angles with measures having a _____ of _____ are called _____.

Example 4: Solve.

1. One angle of a triangle is three times as large as another. The measure of the third angle is 40° more than that of the smallest angle. Find the measure of each angle.
2. Find the measure of the complement of each angle.
 - a. 56°
 - b. 89.5°
3. Find the measure of the supplement of each angle.
 - a. 177°
 - b. 0.2°
4. Find the measure of the angle described.
The measure of the angle's supplement is 52° more than twice that of its complement.

Example 5: Find the area of the shaded region.



4 m