



# Math Study Strategies

## Math for Automotives

### Displacement of a Piston

The length of the diameter of a cylinder in an automobile engine is the **bore**. The distance the piston moves in the cylinder is the **stroke**. The engine capacity, or **displacement**, of a car is the combined volume of all its cylinders.

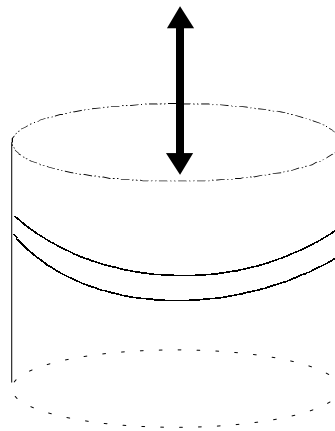
To find the displacement of a piston, find the volume of the cylinder.

Use the formula:

$$V = \pi r^2 h$$

Where

$V$  is the volume,  
 $r$  is the radius, and  
 $h$  is the height ( or stroke)



Find the displacement of a piston with a **4-inch** bore and a **5-inch** stroke

$$V = \pi r^2 h$$

$$V = 3.14(2)^2 5$$

$$V = 62.8$$

The bore measurement is a diameter, so you need to divide it by **2** to find the radius.

The displacement of the piston is: **62.8 cubic inches**.