Piston Displacement Lesson 1 Quiz   Name ____Key____

Solve the following using the cubic inch displacement formula or volume of a cylinder formula. Show work and use appropriate units.

1.   An V-8 engine block has a bore of 4 inches, a stroke of 3.25 inches. Calculate the cubic inch displacement.

$$CID = .7854 \times Bore^2 \times Stroke \times \# Cylinders$$
$$CID = .7854 \times 4^2 \times 3.25 \times 8$$
$$CID = .7854 \times 16 \times 3.25 \times 8$$

$$CID = 327$$

2.   An V-6 engine block has a bore of 3.875 inches, a stroke of 4.125 inches. Calculate the cubic inch displacement.

$$CID = .7854 \times Bore^2 \times Stroke \times \# Cylinders$$
$$CID = .7854 \times 3.875^2 \times 4.125 \times 6$$
$$CID = .7854 \times 15.015625 \times 4.125 \times 6$$
$$CID = 292$$

3.   An V-8 engine block has a bore of 4.030 inches, a stroke of 3.75 inches. Calculate the cubic inch displacement.
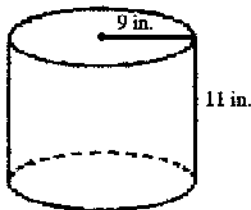
$$CID = .7854 \times Bore^2 \times Stroke \times \# Cylinders$$
$$CID = .7854 \times 4.030^2 \times 3.75 \times 8$$
$$CID = .7854 \times 16.2409 \times 3.75 \times 8$$
$$CID = 383$$

4.   Find the volume of the cylinder.

9 in.

11 in.

Not drawn to scale

$$V = \pi r^2 h$$
$$V = \pi 9^2 (11)$$
$$V = \pi (81)(11)$$
$$V = 2799 \ in^3$$

5.   Find the volume of a cylinder with a radius of 2 ft and a height of 4 ft.

$$V = \pi r^2 h$$
$$V = \pi \cdot 2^2 \cdot 4$$
$$V = \pi \cdot 4 \cdot 4$$
$$V = 50 \ ft^2$$