**Flow Rate Worksheet Answers**

Solve for the given variable.

1. $V=17.23π(31.573)$

$$V=1709.035$$

1. $556.73=804.25v$

$$\frac{556.73}{804.25}=v$$

$$v=.692$$

1. $27=12πr^{2}$

$$\frac{27}{12π}=r^{2}$$

$$r=\sqrt{7.069}$$

$$r=2.66$$

1. The diameter of a well head is 12 ft. The oil has a flow rate of 50 g/m..
What is the velocity of the oil?

The diameter is 12 feet, therefore it has a radius of 6 feet.

$$50=π(6^{2})v$$

$v=4.36$ meters per minute

1. A garden hose has a diameter of ¾ inch and a velocity of 22.63 inches per minute.
What is the flow rate of the water in the hose in gallons?

Diameter is ¾ of an inch; therefore it has a radius of .375 inches.

$$V=\left(.375\right)^{2}\left(22.63\right)$$

$V=3.18$ gallons per minute

1. Water flows through a sewer at a rate of 5 meters per minute with a velocity of .3 m/m.
What is the diameter of the sewer?

$$5=.3πr^{2}$$

$$r^{2}=52.36$$

$$r=\sqrt{52.36}$$

$$r=7.24$$

$$diameter=2r$$

$$d=2(7.24)$$

$d=14.47$meters

1. Firemen release the cap of a fire hydrant that is 7 lbs and has an inner circumference of 6.7 inches, in order to allow 7 gallons of water to flow out. After 1 minute the water is 2.75 feet from the base of the fire hydrant. After 4 hours, they replace the cap and shut of the water; the resulting puddle contains 11 gallons of water. What was the flow rate of the water?

D=rt (this is the same as velocity) thus $v=\frac{d}{t}$

$v=2.75$ feet per minute

Circumference is 6.7, since $C=2πr$, the radius is 10.5

$$V=π\left(10.5^{2}\right)(2.75)$$

$$V=952.49 gallons per minute$$