

Unit Conversion Worksheet

Conversions

1 hour = 3600 seconds

1 mile = 5280 feet

1 yard = 3 feet

1 meter = 3.28 feet

1 km = 0.62 miles

1 light second = 300,000,000 meters

1 kg = 2.2 lbs

1 lb = 0.45 kg

1 quart = 0.946 liters

1 m/s = 2.2 miles/hour

1 foot = 12 inches

1 inch = 2.54 cm = 25.4 mm

Convert the following quantities.

1. 60 miles per hour into meters per second

$$\frac{60 \text{ mi}}{1 \text{ hr}} \cdot \frac{5280 \text{ ft}}{1 \text{ mi}} \cdot \frac{1 \text{ m}}{3.28 \text{ ft}} \cdot \frac{1 \text{ hr}}{3600 \text{ sec}} = \frac{316800 \text{ m}}{11808 \text{ sec}} \approx 26.83 \text{ m/sec}$$

2. 130 meters per second into miles per hour

$$\frac{130 \text{ m}}{1 \text{ sec}} \cdot \frac{3.28 \text{ ft}}{1 \text{ m}} \cdot \frac{1 \text{ mi}}{5280 \text{ ft}} \cdot \frac{3600 \text{ sec}}{1 \text{ hr}} = \frac{1535040}{5280 \text{ hr}} = 290.73 \text{ mi/hr}$$

3. 1100 feet per second into miles per hour

$$\frac{1100 \text{ ft}}{1 \text{ sec}} \cdot \frac{1 \text{ mi}}{5280 \text{ ft}} \cdot \frac{60 \text{ sec}}{1 \text{ min}} \cdot \frac{60 \text{ min}}{1 \text{ hr}} = \frac{3960000 \text{ mi}}{5280 \text{ hr}} = 750 \text{ mi/hr}$$

4. 53 yards per hour into inches per week

$$\frac{53 \text{ yd}}{1 \text{ hr}} \cdot \frac{3 \text{ ft}}{1 \text{ yd}} \cdot \frac{12 \text{ in}}{1 \text{ ft}} \cdot \frac{24 \text{ hr}}{1 \text{ day}} \cdot \frac{7 \text{ day}}{1 \text{ wk}} = 32,0544 \text{ in/week}$$

5. 721 lbs per week into kg per second

$$\frac{721 \text{ lbs}}{1 \text{ week}} \cdot \frac{1 \text{ kg}}{2.2 \text{ lbs}} \cdot \frac{1 \text{ week}}{7 \text{ days}} \cdot \frac{1 \text{ day}}{24 \text{ hrs}} \cdot \frac{1 \text{ hr}}{60 \text{ min}} \cdot \frac{1 \text{ min}}{60 \text{ sec}} = \frac{721}{1330560} = 0.00054 \text{ kg/sec}$$

6. 88 inches per second into miles per day

$$\frac{88 \text{ in}}{1 \text{ sec}} \cdot \frac{1 \text{ ft}}{12 \text{ in}} \cdot \frac{1 \text{ mi}}{5280 \text{ ft}} \cdot \frac{3600 \text{ sec}}{1 \text{ hr}} \cdot \frac{24 \text{ hr}}{1 \text{ day}} = \frac{7603200 \text{ mi}}{63360 \text{ day}} = 120 \text{ mi/day}$$

7. 27 miles per gallon into kilometers per liter

$$\frac{27 \text{ mi}}{1 \text{ gal}} \cdot \frac{1 \text{ km}}{0.62 \text{ mi}} \cdot \frac{1 \text{ gal}}{4 \text{ qt}} \cdot \frac{1 \text{ qt}}{0.946 \text{ L}} = \frac{27 \text{ km}}{2.31608 \text{ L}} = 11.51 \text{ km/L}$$