

Name: _____

Period 2 3 4 6

Date: _____

Unit Conversion Worksheet

Conversions

1 hour = 3600 seconds

1 meter = 3.28 feet

1 kg = 2.2 lbs

1 m/s = 2.2 miles/hour

1 mile = 5280 feet

1 km = 0.62 miles

1 lb = 0.45 kg

1 foot = 12 inches

1 yard = 3 feet

1 light second = 300,000,000 meters

1 quart = 0.946 liters

1 inch = 2.54 cm = 25.4 mm

Convert the following quantities.

565,900 seconds into days

$$\frac{565900 \cancel{\text{sec}}}{1} \times \frac{1 \cancel{\text{hr}}}{60 \cancel{\text{min}}} \times \frac{1 \cancel{\text{hr}}}{60 \cancel{\text{min}}} \times \frac{1 \text{ day}}{24 \cancel{\text{hr}}} = \frac{565900}{60 \cdot 60 \cdot 24} \text{ days} = \boxed{6.55 \text{ days}}$$

17 years into minutes

① 1 year = 365 days
 ② 1 day = 24 hr
 ③ 1 hr = 60 min

$$\frac{17 \cancel{\text{yr}}}{1} \times \frac{365 \cancel{\text{days}}}{1 \cancel{\text{yr}}} \times \frac{24 \cancel{\text{hr}}}{1 \cancel{\text{day}}} \times \frac{60 \cancel{\text{min}}}{1 \cancel{\text{hr}}} = \boxed{8935200 \text{ min}}$$

43 miles into feet

① 1 mi = 5280 ft

$$\frac{43 \cancel{\text{mi}}}{1} \times \frac{5280 \text{ ft}}{1 \cancel{\text{mi}}} = \boxed{227040 \text{ ft}}$$

165 pounds into kilograms

① 1 lb = 0.45 kg

$$\frac{165 \cancel{\text{lb}}}{1} \times \frac{0.45 \text{ kg}}{1 \cancel{\text{lb}}} = \boxed{74.25 \text{ kg}}$$

100 yards into meters

① 1 yd = 3 ft
 ② 3.28 ft = 1 m

$$\frac{100 \cancel{\text{yd}}}{1} \times \frac{3 \cancel{\text{ft}}}{1 \cancel{\text{yd}}} \times \frac{1 \text{ m}}{3.28 \cancel{\text{ft}}} = \boxed{91.46 \text{ meters}}$$

22,647 inches into miles

① 12 in = 1 ft
 ② 5280 ft = 1 mi

$$\frac{22647 \cancel{\text{in}}}{1} \times \frac{1 \cancel{\text{ft}}}{12 \cancel{\text{in}}} \times \frac{1 \text{ mi}}{5280 \cancel{\text{ft}}} = \boxed{0.36 \text{ miles}}$$

2678 cm into feet

① 2.54 cm = 1 in
 ② 12 in = 1 ft

$$\frac{2678 \cancel{\text{cm}}}{1} \times \frac{1 \cancel{\text{in}}}{2.54 \cancel{\text{cm}}} \times \frac{1 \text{ ft}}{12 \cancel{\text{in}}} = \boxed{87.86 \text{ ft}}$$

60 miles per hour into meters per second

① 1 mi = 5280 ft
 ② 1 hr = 60 min
 ③ 1 min = 60 sec

$$\frac{60 \text{ mi}}{1 \text{ hr}} \times \frac{5280 \text{ ft}}{1 \text{ mi}} \times \frac{1 \text{ min}}{60 \text{ sec}} \times \frac{1 \text{ hr}}{60 \text{ min}} = \frac{316800 \text{ ft}}{3600 \text{ sec}} = \boxed{88 \text{ ft/sec}}$$

130 meters per second into miles per hour

① 1 m = 3.28 ft
 ② 5280 ft = 1 mi
 ③ 60 sec = 1 min
 ④ 60 min = 1 hr

$$\frac{130 \text{ m}}{1 \text{ sec}} \times \frac{3.28 \text{ ft}}{1 \text{ m}} \times \frac{1 \text{ mi}}{5280 \text{ ft}} \times \frac{60 \text{ sec}}{1 \text{ min}} \times \frac{60 \text{ min}}{1 \text{ hr}} = \frac{1535040 \text{ ft}}{5280 \text{ hr}} = \boxed{290.73 \text{ ft/hr}}$$

1100 feet per second into miles per hour

① 5280 ft = 1 mi
 ② 60 sec = 1 min
 ③ 60 min = 1 hr

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

53 yards per hour into inches per week

$$\frac{53 \text{ yd}}{1 \text{ hr}} \times \frac{3 \text{ ft}}{1 \text{ yd}} \times \frac{12 \text{ in}}{1 \text{ ft}} \times \frac{24 \text{ hr}}{1 \text{ day}} \times \frac{7 \text{ days}}{1 \text{ wk}} = \boxed{320544 \text{ in/wk}}$$

721 lbs per week into kg per second

$$\frac{721 \text{ lbs}}{1 \text{ week}} \times \frac{0.45 \text{ kg}}{1 \text{ lbs}} \times \frac{1 \text{ wk}}{7 \text{ days}} \times \frac{1 \text{ day}}{24 \text{ hr}} \times \frac{1 \text{ hr}}{60 \text{ min}} \times \frac{1 \text{ min}}{60 \text{ sec}} = \frac{324.45}{86400} = \boxed{.0038 \text{ kg/sec}}$$

88 inches per second into miles per day

$$\frac{88 \text{ in}}{1 \text{ sec}} \times \frac{1 \text{ ft}}{12 \text{ in}} \times \frac{1 \text{ mi}}{5280 \text{ ft}} \times \frac{60 \text{ sec}}{1 \text{ min}} \times \frac{60 \text{ min}}{1 \text{ hr}} \times \frac{24 \text{ hr}}{1 \text{ day}} = \frac{7603200}{5280} = \boxed{1440 \text{ mi/in}}$$

12080 gallons per month into liters per hour

$$\frac{12080 \text{ gal}}{1 \text{ month}} \times \frac{4 \text{ quarts}}{1 \text{ gal}} \times \frac{0.946 \text{ liter}}{1 \text{ quart}} \times \frac{1 \text{ month}}{4 \text{ weeks}} \times \frac{1 \text{ wk}}{7 \text{ days}} \times \frac{1 \text{ day}}{24 \text{ hr}} = \frac{4843.52 \text{ L}}{672 \text{ hr}} = \boxed{7.21 \text{ liters/hr}}$$

27 miles per gallon into kilometers per liter

$$\frac{27 \text{ mi}}{1 \text{ gal}} \times \frac{1 \text{ km}}{.62 \text{ mi}} \times \frac{1 \text{ qt}}{.946 \text{ L}} = \frac{27}{2.34608} = \boxed{11.51 \text{ km/L}}$$

186,282 miles per second into meters per second

$$\frac{186282 \text{ mi}}{1 \text{ sec}} \times \frac{5280 \text{ ft}}{1 \text{ mi}} \times \frac{1 \text{ m}}{3.28 \text{ ft}} = \frac{98355840}{3.28} = \boxed{29986536.59 \text{ m/sec}}$$