

Conversions Handout

12 inches = 1 foot; 3 feet = 1 yard; 5280 feet = 1 mile; 2.54 cm = 1 inch

Kilometers to meters: 1 km = 1,000 m

Meters to millimeters: 1 m = 1000 mm

Meters to centimeters: 1 m = 100 cm

Meters to decimeters: 1 m = 10 dm

Centimeters to inches: 2.54 cm = 1 in

Milliliters to cubic-inches: 16.39 mL = 1 in³

Milliliters to cubic-centimeters: 1 mL = 1 cc (1cm³)

Milliliters to liters: 1000 mL = 1 L

Quarts to liters: 1.06 qt = 1 L

Liters to gallons: 3.79 L = 1 gal

Cups to fluid-ounces: 1 cup = 8 oz

Cups to pints: 2 cups = 1 pint

Pints to quarts: 2 pints = 1 quart

Quarts to Gallons: 4 quarts = 1 gal

Pounds to ounces: 1 lb = 16 oz

Tons to pounds: 1 T = 2,000 lb

Grams to ounces: 28.35 g = 1 oz

Grams to kilograms: 1000 g = 1 kg

Pounds to kilograms: 2.20 lb = 1 kg

Fahrenheit to Celsius: $C = \frac{5(F - 32)}{9}$

Celsius to Fahrenheit: $F = \frac{9}{5}C + 32$

Pre-algebra

Practice Exam #04

1. Make the following conversions by multiplying by the appropriate conversion factor.

Round you final answer to the nearest thousandth.

Note: 12 inches = 1 foot; 3 feet = 1 yard; 5280 feet = 1 mile; 2.54 cm = 1 inch

a) 500,000 *inches* to miles

b) 15 *cm* to inches

c) 10,000 *yd* to miles

d) 35,000 *sec* to hours

e) 2 *days* to *sec*

2. Make the following conversions by multiplying by the appropriate conversion factor.

Round your answers to the nearest thousandths.

Note: 12 inches = 1 foot; 3 feet = 1 yard; 5280 feet = 1 mile; 2.54 cm = 1 inch

a) $12 \frac{\text{mi}}{\text{hr}}$ to $\frac{\text{cm}}{\text{sec}}$

b) $2,000 \frac{\text{cm}}{\text{sec}}$ to $\frac{\text{mi}}{\text{hr}}$

c) 10 yd^2 to cm^2

d) 750 in^3 to yd^3

e) 10 yd^3 to in^3

3. Make the following conversions by multiplying by the appropriate conversion factor.

Round your answers to the nearest thousandths. See attached conversion handout!

a) 10 kg to ounces

b) 12 lbs to grams

c) 437 cc to liters

d) 15 L to cups

e) 500 in^3 to milliliters

4. Use the following conversions to convert 600 Pebbles to Diamonds.

13 crystals = 6 rocks; 8 gems = 26 crystals; 24 pebbles = 3 rocks; 20 gems = 2 diamonds

5. A family with a swimming pool puts a chain link fence around the pool. The fence forms a rectangle 14 yards wide and 22 yards long. If the chain-link fence sells for \$2.50 per foot, how much will it cost to fence all four sides of the pool?

6. In horse racing, 1 furlong = 220 yards. How many furlongs are in 1 mile?

7. A 5.0 liter engine has a displacement of how many cubic inches? **See attached conversion handout!**

8. Convert $120^{\circ} C$ to degrees Fahrenheit. **Use the given formula on the attached conversion handout!**

9. Convert $100^{\circ} F$ to degrees Celsius. **Use the given formula on the attached conversion handout! Round to the nearest tenth.**

10. How many seconds are in 1.8 hours?

11. 65 miles per hour is equivalent to how many kilometers per hour? **See attached conversion handout! Round to the nearest tenth.**

Pre-algebra

Practice Exam #04

1. Make the following conversions by multiplying by the appropriate conversion factor.

Round you final answer to the nearest thousandth.

Note: 12 inches = 1 foot; 3 feet = 1 yard; 5280 feet = 1 mile; 2.54 cm = 1 inch

a) 500,000 inches to miles

$$\left(\frac{500,000 \text{ in}}{1}\right)\left(\frac{1 \text{ ft}}{12 \text{ in}}\right)\left(\frac{1 \text{ mi}}{5280 \text{ ft}}\right) = \boxed{7.891 \text{ mi}}$$

b) 15 cm to inches

$$\left(\frac{15 \text{ cm}}{1}\right)\left(\frac{1 \text{ in}}{2.54 \text{ cm}}\right) = \boxed{5.906 \text{ in}}$$

c) 10,000 yd to miles

$$\left(\frac{10,000 \text{ yd}}{1}\right)\left(\frac{3 \text{ ft}}{1 \text{ yd}}\right)\left(\frac{1 \text{ mi}}{5280 \text{ ft}}\right) = \boxed{5.682 \text{ mi}}$$

d) 35,000 sec to hours

$$\left(\frac{35,000 \text{ sec}}{1}\right)\left(\frac{1 \text{ min}}{60 \text{ sec}}\right)\left(\frac{1 \text{ hr}}{60 \text{ min}}\right) = \boxed{9.722 \text{ hr}}$$

e) 2 days to sec

$$\left(\frac{2 \text{ days}}{1}\right)\left(\frac{24 \text{ hr}}{1 \text{ day}}\right)\left(\frac{60 \text{ min}}{1 \text{ hr}}\right)\left(\frac{60 \text{ sec}}{1 \text{ min}}\right) = \boxed{172,800.000 \text{ sec}}$$

2. Make the following conversions by multiplying by the appropriate conversion factor.

Round your answers to the nearest thousandths.

Note: 12 inches = 1 foot; 3 feet = 1 yard; 5280 feet = 1 mile; 2.54 cm = 1 inch

a) $12 \frac{\text{mi}}{\text{hr}}$ to $\frac{\text{cm}}{\text{sec}}$

$$\left(\frac{12 \text{ mi}}{1 \text{ hr}}\right) \left(\frac{5280 \text{ ft}}{1 \text{ mi}}\right) \left(\frac{12 \text{ in}}{1 \text{ ft}}\right) \left(\frac{2.54 \text{ cm}}{1 \text{ in}}\right) \left(\frac{1 \text{ hr}}{60 \text{ min}}\right) \left(\frac{1 \text{ min}}{60 \text{ sec}}\right) =$$

$$\boxed{536.448 \frac{\text{cm}}{\text{sec}}}$$

b) $2,000 \frac{\text{cm}}{\text{sec}}$ to $\frac{\text{mi}}{\text{hr}}$

$$\left(\frac{2000 \text{ cm}}{1 \text{ sec}}\right) \left(\frac{1 \text{ in}}{2.54 \text{ cm}}\right) \left(\frac{1 \text{ ft}}{12 \text{ in}}\right) \left(\frac{1 \text{ mi}}{5280 \text{ ft}}\right) \left(\frac{60 \text{ sec}}{1 \text{ min}}\right) \left(\frac{60 \text{ min}}{1 \text{ hr}}\right) =$$

$$\boxed{44.739 \frac{\text{mi}}{\text{hr}}}$$

c) 10 yd^2 to cm^2

$$\left(\frac{10 \text{ yd}^2}{1}\right) \left(\frac{3^2 \text{ ft}^2}{1^2 \text{ yd}^2}\right) \left(\frac{12^2 \text{ in}^2}{1^2 \text{ ft}^2}\right) \left(\frac{2.54^2 \text{ cm}^2}{1^2 \text{ in}^2}\right) =$$

$$\left(\frac{10 \text{ yd}^2}{1}\right) \left(\frac{9 \text{ ft}^2}{1 \text{ yd}^2}\right) \left(\frac{144 \text{ in}^2}{1 \text{ ft}^2}\right) \left(\frac{6.4516 \text{ cm}^2}{1 \text{ in}^2}\right) = \boxed{83,612.736 \text{ cm}^2}$$

d) 750 in^3 to yd^3

$$\left(\frac{750 \text{ in}^3}{1}\right) \left(\frac{1^3 \text{ ft}^3}{12^3 \text{ in}^3}\right) \left(\frac{1^3 \text{ yd}^3}{3^3 \text{ ft}^3}\right) =$$

$$\left(\frac{750 \text{ in}^3}{1}\right) \left(\frac{1 \text{ ft}^3}{1,728 \text{ in}^3}\right) \left(\frac{1 \text{ yd}^3}{27 \text{ ft}^3}\right) = \boxed{0.016 \text{ yd}^3}$$

e) 10 yd^3 to in^3

$$\left(\frac{10 \text{ yd}^3}{1}\right) \left(\frac{3^3 \text{ ft}^3}{1^3 \text{ yd}^3}\right) \left(\frac{12^3 \text{ in}^3}{1^3 \text{ ft}^3}\right) =$$

$$\left(\frac{10 \text{ yd}^3}{1}\right) \left(\frac{27 \text{ ft}^3}{1 \text{ yd}^3}\right) \left(\frac{1,728 \text{ in}^3}{1 \text{ ft}^3}\right) = \boxed{466,560 \text{ in}^3}$$

3. Make the following conversions by multiplying by the appropriate conversion factor.

Round your answers to the nearest thousandths. See attached conversion handout!

a) 10 kg to ounces

$$\left(\frac{10 \text{ kg}}{1}\right) \left(\frac{2.20 \text{ lb}}{1 \text{ kg}}\right) \left(\frac{16 \text{ oz}}{1 \text{ lb}}\right) = \boxed{352.000 \text{ oz}}$$

-OR-

$$\left(\frac{10 \text{ kg}}{1}\right) \left(\frac{1000 \text{ g}}{1 \text{ kg}}\right) \left(\frac{1 \text{ oz}}{28.35 \text{ g}}\right) = \boxed{352.733 \text{ oz}}$$

b) 12 lbs to grams

$$\left(\frac{12 \text{ lb}}{1}\right) \left(\frac{16 \text{ oz}}{1 \text{ lb}}\right) \left(\frac{28.35 \text{ g}}{1 \text{ oz}}\right) = \boxed{5,443.200 \text{ g}}$$

-OR-

$$\left(\frac{12 \text{ lb}}{1}\right) \left(\frac{1 \text{ kg}}{2.20 \text{ lb}}\right) \left(\frac{1000 \text{ g}}{1 \text{ kg}}\right) = \boxed{5,454.545 \text{ g}}$$

c) 437 cc to liters

$$\left(\frac{437 \text{ cc}}{1}\right) \left(\frac{1 \text{ mL}}{1 \text{ cc}}\right) \left(\frac{1 \text{ L}}{1000 \text{ mL}}\right) = \boxed{0.437 \text{ L}}$$

d) 15 L to cups

$$\left(\frac{15 \text{ L}}{1}\right) \left(\frac{1.06 \text{ qt}}{1 \text{ L}}\right) \left(\frac{2 \text{ pt}}{1 \text{ qt}}\right) \left(\frac{2 \text{ cups}}{1 \text{ pt}}\right) = \boxed{63.600 \text{ cups}}$$

$$\left(\frac{15 \text{ L}}{1}\right) \left(\frac{1 \text{ gal}}{3.79 \text{ L}}\right) \left(\frac{4 \text{ qt}}{1 \text{ gal}}\right) \left(\frac{2 \text{ pt}}{1 \text{ qt}}\right) \left(\frac{2 \text{ cups}}{1 \text{ pt}}\right) = \boxed{63.325 \text{ cups}}$$

e) 500 in³ to milliliters

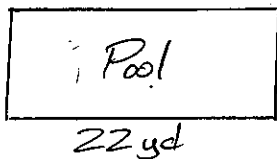
$$\left(\frac{500 \text{ in}^3}{1}\right) \left(\frac{16.39 \text{ mL}}{1 \text{ in}^3}\right) = \boxed{8,195.000 \text{ mL}}$$

4. Use the following conversions to convert 600 Pebbles to Diamonds.

13 crystals = 6 rocks; 8 gems = 26 crystals; 24 pebbles = 3 rocks; 20 gems = 2 diamonds

$$\left(\frac{600 \text{ pebbles}}{1}\right) \left(\frac{3 \text{ rocks}}{24 \text{ pebbles}}\right) \left(\frac{13 \text{ crystals}}{6 \text{ rocks}}\right) \left(\frac{8 \text{ gems}}{26 \text{ crystals}}\right) \left(\frac{2 \text{ diamonds}}{20 \text{ gems}}\right) = \boxed{5 \text{ diamonds}}$$

5. A family with a swimming pool puts a chain link fence around the pool. The fence forms a rectangle 14 yards wide and 22 yards long. If the chain-link fence sells for \$2.50 per foot, how much will it cost to fence all four sides of the pool?



$$P = 22 \text{ yd} + 14 \text{ yd} + 22 \text{ yd} + 14 \text{ yd} = 72 \text{ yd}$$

$$\left(\frac{72 \text{ yd}}{1}\right) \left(\frac{3 \text{ ft}}{1 \text{ yd}}\right) \left(\frac{2.50 \text{ dollars}}{1 \text{ ft}}\right) = \boxed{\$540.00}$$

Cost per foot.

6. In horse racing, 1 furlong = 220 yards. How many furlongs are in 1 mile?

$$\left(\frac{1 \text{ mi}}{1}\right) \left(\frac{5280 \text{ ft}}{1 \text{ mi}}\right) \left(\frac{1 \text{ yd}}{3 \text{ ft}}\right) \left(\frac{1 \text{ furlong}}{220 \text{ yd}}\right) = \boxed{8 \text{ furlongs}}$$

7. A 5.0 liter engine has a displacement of how many cubic inches? See attached conversion handout!

$$\left(\frac{5.0 \text{ L}}{1}\right) \left(\frac{1000 \text{ mL}}{1 \text{ L}}\right) \left(\frac{1 \text{ in}^3}{16.39 \text{ mL}}\right) = \boxed{305.064 \text{ in}^3}$$

8. Convert $120^{\circ} C$ to degrees Fahrenheit. Use the given formula on the attached conversion handout!

$$F = \frac{9}{5}C + 32$$

$$F = \frac{9}{5}(120) + 32 = \frac{9}{5} \left(\frac{120}{1} \right) + 32 = 216 + 32 = 248$$

$$\boxed{248^{\circ}F}$$

9. Convert $100^{\circ} F$ to degrees Celsius. Use the given formula on the attached conversion handout! Round to the nearest tenth.

$$C = \frac{5(F-32)}{9}$$

$$C = \frac{5(100-32)}{9} = \frac{5(68)}{9} = \frac{340}{9} = 37.8$$

$$\boxed{37.8^{\circ}C}$$

10. How many seconds are in 1.8 hours?

$$\left(\frac{1.8 \text{ hr}}{1} \right) \left(\frac{60 \text{ min}}{1 \text{ hr}} \right) \left(\frac{60 \text{ SEC}}{1 \text{ min}} \right) = \boxed{6,480 \text{ SEC}}$$

11. 65 miles per hour is equivalent to how many kilometers per hour? See attached conversion handout! Round to the nearest tenth.

$$\left(\frac{65 \text{ mi}}{1 \text{ hr}} \right) \left(\frac{5280 \text{ ft}}{1 \text{ mi}} \right) \left(\frac{12 \text{ in}}{1 \text{ ft}} \right) \left(\frac{2.54 \text{ cm}}{1 \text{ in}} \right) \left(\frac{1 \text{ m}}{100 \text{ cm}} \right) \left(\frac{1 \text{ km}}{1000 \text{ m}} \right) = \boxed{104.6 \frac{\text{km}}{\text{hr}}}$$