

CHANGING MEASUREMENT UNITS

1. Create a fraction out of an equivalent statement between the current measurement unit and the new desired unit. Place the current units on top and the desired units on the bottom.
2. Multiply what you want to change by this fraction.

Note: Metric Units can be changed this way, too, although it's easier to move the decimal as described on the *METRIC SYSTEM CONVERSIONS* Information Sheet.

EXAMPLE 1: Change 42 inches into an equivalent number of feet.

1. We know 1 foot = 12 inches.
2. Multiply 42 inches by a fraction with 1 foot on top and 12 inches on the bottom.

$$42 \cancel{\text{inches}} \times \frac{1 \cancel{\text{foot}}}{12 \cancel{\text{inches}}} = \frac{42}{12} \text{ feet} = \frac{7}{2} \text{ feet} = 3.5 \text{ feet}$$

EXAMPLE 2: Change 3 square feet into an equivalent number of square inches.

1. We know 1 foot = 12 inches.
2. Since square feet are feet x feet, we will multiply the original 3 feet twice by the fraction.

$$3 \cancel{\text{feet}}^2 \times \frac{12 \cancel{\text{inches}}}{1 \cancel{\text{foot}}} \times \frac{12 \cancel{\text{inches}}}{1 \cancel{\text{foot}}} = 432 \text{ inches}^2$$

EXAMPLE 3: Change 704 yards into an equivalent number of miles.

1. If we don't have know how many yards are in a mile, we can first change yards to feet and then feet to miles, because we know 1 yard = 3 feet and 5280 feet = 1 mile. For the first fraction, yards will be the old units and feet the new. In the second fraction, feet will be the old units and miles the new.
2. When we do the multiplication, we can do it all in one step.

$$704 \cancel{\text{yards}} \times \frac{3 \cancel{\text{feet}}}{1 \cancel{\text{yard}}} \times \frac{1 \cancel{\text{mile}}}{5280 \cancel{\text{feet}}} = \frac{2112}{5280} \text{ miles} = \frac{2}{5} \text{ miles} = .4 \text{ miles}$$

English Measurement Equivalents

1 foot = 12 inches 1 yard = 3 feet 1 mile = 5,280 feet	1 hour = 60 minutes 1 minute = 60 seconds 1 ton = 2,000 pounds	1 pound = 16 ounces 1 foot ³ = 7.48 gallons 1 gallon = 231 in ³	1 pint = 16 fluid ounces 1 quart = 2 pints 1 gallon = 4 quarts
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English and Metric Equivalents

1 in = 2.54 centimeters 1 foot = 0.3048 meters 1 mile = 1.609 kilometers 1 centimeter = 0.394 inches 1 meter = 3.28 feet	1 kilometer = 0.62 miles 1 fluid ounce = 29.57 milliliters 1 quart = 0.946 liters 1 centiliter = 0.338 fluid ounces 1 liter = 1.057 quarts	1 ounce = 28.35 grams 1 pound = 0.4536 kilograms 1 gram = 0.0353 ounces 1 kilogram = 2.2046 pounds
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