

"I Can Solve Real-World Problems by Comparing Rates, Prices, and Units of Measurement."

## Measurements and Ratios

You will receive a **Reference Sheet** on the NYS exam with the following conversions. Use these to convert the following measurements.

### Grade 6 Mathematics Reference Sheet

#### CONVERSIONS

1 inch = 2.54 centimeters

1 meter = 39.37 inches

1 mile = 5,280 feet

1 mile = 1,760 yards

1 mile = 1.609 kilometers

1 kilometer = 0.62 mile

1 pound = 16 ounces

1 pound = 0.454 kilogram

1 kilogram = 2.2 pounds

1 ton = 2,000 pounds

1 cup = 8 fluid ounces

1 pint = 2 cups

1 quart = 2 pints

1 gallon = 4 quarts

1 gallon = 3.785 liters

1 liter = 0.264 gallon

1 liter = 1,000 cubic centimeters

1. How many pounds is 35.5 kilograms?

2. Jim ran 3.5 miles. How many kilometers is that?

3. Convert 36 inches to centimeters.

4. How many cups are in 8 quarts of milk?

## Example

Is a rider 3 feet 10 inches tall allowed to ride this roller coaster?

Use 1 inch = 2.54 centimeters.



## Got It?

One of the rails on the roller coaster needs to be replaced. The old rail is 250 centimeters long. The new piece is 8 feet long. Will the new piece fit? Use the conversion factor 1 inch = 2.54 centimeters.

## Example

A bread recipe calls for 500 grams of flour. About how many pounds of flour do you need? Use 1 ounce  $\approx$  28.4 grams.

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1 liter = 1,000 cubic centimeters

1. How many pounds is 35.5 kilograms?

$$\frac{1 \text{ kg}}{2.2 \text{ lbs}} = \frac{35.5 \text{ kg}}{x}$$

$$78.1 = x$$

78.1 pounds

2. Jim ran 3.5 miles. How many kilometers is that?

$$\frac{1 \text{ mile}}{1.609 \text{ km}} = \frac{3.5 \text{ miles}}{x}$$

$$5.6 \text{ km}$$

3. Convert 36 inches to centimeters.

$$\frac{1 \text{ inch}}{2.54 \text{ cm}} = \frac{36 \text{ in}}{x}$$

$$91.4 \text{ cm}$$

4. How many cups are in 8 quarts of milk?

1 qt = 2 pts = 4 cups

$$\frac{1 \text{ qt}}{4 \text{ cups}} = \frac{8 \text{ qt}}{x}$$

$$32 = x$$

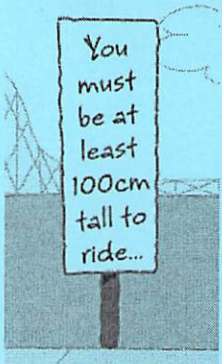
32 cups



## Example

Is a rider 3 feet 10 inches tall allowed to ride this roller coaster?

Use 1 inch = 2.54 centimeters.



$$3 \text{ ft } 10 \text{ in} = 46 \text{ in}$$

$$\frac{1 \text{ in}}{2.54 \text{ cm}} = \frac{46 \text{ in}}{X}$$

The rider is 116.8 cm tall and CAN ride the ride!

## Got It?

One of the rails on the roller coaster needs to be replaced. The old rail is 250 centimeters long. The new piece is 8 feet long. Will the new piece fit? Use the conversion factor 1 inch = 2.54 centimeters.

$$\frac{1 \text{ in}}{2.54 \text{ cm}} = \frac{96 \text{ in}}{X}$$

$$8 \text{ ft} = 96 \text{ in}$$

The piece is 243.8 cm and WILL NOT fit!

## Example

A bread recipe calls for 500 grams of flour. About how many pounds of flour do you need? Use 1 ounce  $\approx$  28.4 grams.

$$\frac{1 \text{ oz}}{28.4 \text{ g}} = \frac{X}{500 \text{ g}}$$
$$\cancel{28.4} \times = 500 \div \cancel{28.4}$$
$$X = 17.6 \text{ oz}$$

$$\frac{16 \text{ oz}}{1 \text{ lb}} = \frac{17.6 \text{ oz}}{X}$$
$$\frac{17.6}{16} = \frac{16X}{16}$$
$$X \approx 1.0 \text{ lbs}$$