**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** October 14, 2014

**CONVERTING BETWEEN MEASUREMENT SYSTEMS**

Measurements are used when determining the length, weight, or capacity of an object. The two most common systems of measurement are the customary system and the metric system.

The table shows equivalencies between the customary and metric systems. You can use these equivalencies to convert a measurement in one system to a measurement in the other system.

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| --- | --- | --- |
| **Length** | **Weight/Mass** | **Capacity** |
| 1 inch = 2.54 centimeters  1 foot ≈ 0.305 meter  1 yard ≈ 0.914 meter  1 mile ≈ 1.61 kilometers | 1 ounce ≈ 28.4 grams  1 pound ≈ 0.454 kilogram | 1 fluid ounce ≈ 29.6 milliliters  1 quart ≈ 0.946 liter  1 gallon ≈ 3.79 liters |

**Using Conversion Factors**

Another way to convert measurements is by using a ratio called a conversion factor.

A conversion factor is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Example 1: While lifting weights, John adds 11.35 kilograms to his bar. About how many pounds does he add to his bar?

Step 1: Find the conversion factor.

Step 2: Convert the given measurement.

YOUR TURN!

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| **2.** 6 quarts ≈ \_\_\_\_liters **3.** 14 feet ≈ \_\_\_\_meters  **4.** 255.6 grams ≈ \_\_\_\_ounces **5.** 7 liters ≈ \_\_\_\_\_quarts |

**Using Proportions to Convert Measurements**

You can also convert a measurement from one unit to another by using a proportion. First write the conversion factor as a ratio, and then multiply by a form of 1 to generate an equivalent ratio. Recall that two equal ratios form a proportion.

Example 2: Bob’s driveway is 45 feet long by 18 feet wide. He plans to pave the entire driveway. The asphalt paving costs $24 per square meter. What will be the total cost of the paving?

Step 1: First find the area of the driveway in square meters.

Step 2: Find the area.

Step 3: Now find the total cost of the paving.

YOUR TURN!

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| A flower bed is 2 meters wide and 3 meters long. What is the area of the flower bed in square feet? Round intermediate steps and your answer to the nearest hundredth. |