**Scientist: Per: Date:**

**Unit Conversions: Ratios**

 Ratios relate two quantities. We use ratios in our everyday lives. For example, 1 week contains 7 days. This ratio can be written in several ways:

|  |  |  |
| --- | --- | --- |
| $$1 week=7 days$$ | $$\frac{1 week}{7 days}$$ | $$\frac{7 days}{1 week}$$ |

Ratios can be written for almost anything you can think of! There are 12 months in one year. 1 mile is 5,280 feet. 1 dozen eggs is 12 eggs.

An important type of ratio relates quantities within an object. For example, consider the human body. We can relate several quantities within the human body:

|  |  |  |  |
| --- | --- | --- | --- |
| $$\frac{1 person}{2 legs}$$ | $$\frac{2 eyes}{10 fingers}$$ | $$\frac{2 ears}{2 knees}$$ | $$\frac{4 limbs}{1 body}$$ |



These are just a few examples. Write as many examples as you can for the spider:

Look around the room. Come up with 5 different ratios within the room.

**Common Conversion Factors**

**1000 meters = 1 kilometer (Km)**

**5280 feet = 1 mile**

**12 inches = 1 foot**

**1 mile = 1.6 Km**

**1000 grams = 1 Kilogram (Kg)**

**1 pound = .4 Kilogram (Kg)**

**1 pound = 453 grams (g)**

**60 seconds = 1 minute**

**60 minutes = 1 hour**

**24 hours = 1 day**

**1 year = 365 days**

**1 gallon = 4 quarts**

**1 cup = 16 tablespoons**

**2 cups = 1 pint**

**1 quart = 2 pints**

1) 150 seconds is the same as how many hours?

|  |  |  |  |
| --- | --- | --- | --- |
| $$\frac{150 seconds}{}$$ | $$\frac{1 }{ }$$ | $$\frac{1 }{ }$$ | $$\frac{ hours}{ }$$ |

2) 5000 minutes is the same as how many days?

|  |  |  |  |
| --- | --- | --- | --- |
| $$\frac{5000 minutes}{}$$ | $$\frac{1 }{ }$$ | $$\frac{1 }{ }$$ | $$\frac{ days}{ }$$ |

3) 2 kilometers is the same as how many feet?

|  |  |  |  |
| --- | --- | --- | --- |
| $$\frac{2 km}{}$$ | $$\frac{1 }{ }$$ | $$\frac{1 }{ }$$ | $$\frac{ feet}{ }$$ |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| $$\frac{1 gallon}{}$$ | $$\frac{1 }{ }$$ | $$\frac{1 }{ }$$ | $$\frac{ hours}{ }$$ | $$\frac{ hours}{ }$$ | $$\frac{ tbsp}{ }$$ |

4) 1 gallon is the same as how tablespoons?

5) 15 meters/second is how many miles/hour?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| $$\frac{15 meters}{second}$$ | $$\frac{1 }{ }$$ | $$\frac{1 }{ }$$ | $$\frac{ hours}{ }$$ | $$\frac{ hours}{ }$$ | $$\frac{ miles}{hour }$$ |

6) A car drives at 30 miles/hour for 2.47 hours, how many miles did they travel?

|  |  |  |  |
| --- | --- | --- | --- |
| $$\frac{30 miles}{hour}$$ | $$\frac{1 }{ }$$ | $$\frac{1 }{ }$$ | $$\frac{ miles}{ }$$ |