

Warmup

1. 1 cm = _____ mm

1 km = _____ m

1 yard = _____ feet

1 meter = _____ cm

1 mile = _____ feet

1 foot = _____ inches

2. A fraction equals 1 when the numerator _____ the denominator.

An example of a fraction that equals 1 is: —

3. $\frac{(2)(3)(5)}{(7)(5)(3)}$

4. $\frac{(2)(6)(9)}{(9)(11)(2)}$

I. Understanding Conversions

Us Customary Volume and Capacity Equivalent Measures



Us Customary Time Equivalent Measures



Us Customary Length Equivalent Measures



Us Customary to metric conversion



Unit Conversions

Metric Equivalent Measures

10 mm = 1 cm
100 cm = 1 m
1000 m = 1 km

Us Customary Volume and Capacity Equivalent Measures

8 ounces = 1 cup
2 cups = 1 pint
2 pints = 1 quart
4 quarts = 1 gallon

Us Customary Time Equivalent Measures

60 seconds = 1 minute
60 minutes = 1 hour
24 hours = 1 day
7 days = 1 week
52 weeks = 1 year
365 days = 1 year
366 days = 1 leap year
12 months = 1 year

Us Customary Length Equivalent Measures

12 inches = 1 foot
3 feet = 1 yard
5280 feet = 1 mile
1760 yards = 1 mile

Us Customary to metric conversion

2.54 cm = 1 inch

2 pints = _____ quarts
Therefore

$$\frac{2 \text{ pints}}{\text{quarts}} = \frac{\text{quarts}}{2 \text{ pints}} = 1$$

1 yard = _____ feet
Therefore

$$\frac{1 \text{ yard}}{\text{feet}} = \frac{\text{feet}}{1 \text{ yard}} = 1$$

Write two rates regarding minutes to hours.

5. Write two rates involving days and years.

6. Write two rates involving yards and miles.

7.

II. Multiplying by Unit Rates

How many days are in 4 weeks?

4 weeks = _____ days

7 days = 1 week

4 weeks $\left(\frac{7 \text{ days}}{1 \text{ week}}\right) = \text{_____} = \text{_____ days}$

Cross Cancel

$$\frac{2 \text{ hours}}{1} \cdot \frac{60 \text{ minutes}}{1 \text{ hour}}$$

Cross Cancel

$$\frac{6 \text{ quarts}}{1} \cdot \frac{1 \text{ gallon}}{4 \text{ quarts}}$$

8. Cross cancel the like-factors.

$$\frac{3 \text{ meters}}{1} \cdot \frac{1 \text{ km}}{1000 \text{ meters}} = \frac{3}{1000} \text{ km}$$

9. Cross cancel the like-factors.

$$\frac{5 \text{ miles}}{1} \cdot \frac{1760 \text{ yards}}{1 \text{ mile}} = \frac{(5)(1760)}{1} \text{ yards}$$

10. Determine the unit rate used to convert 4 inches to feet.

4 inches $\cdot$ _____ = _____ feet

11. Determine the unit rate used to convert 8 cups to ounces.

8 cups $\cdot$ _____ = _____ ounces

12.

III. Calculating the Unit Conversions

How many minutes are in 45 seconds?

45 seconds = _____ minutes

60 seconds = 1 minute

45 seconds $\left(\frac{1}{60}\right) = \text{_____} = \text{_____ minutes}$

Convert 12 ounces to cups.

(Round to 4 decimal places)

Convert 2 cm to mm.

(Round to 4 decimal places)

13. Convert 9 years to weeks.

(Round to 4 decimal places)

14. Convert: 25 cm = _____ inches

(Round to 4 decimal places)

15.

IV. Practice

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