

Unit Conversion and Unit Rate Notes

Name _____ Class Period _____

I. Set up and solve the following.

1. 8 quarts to gallons

$$\frac{8 \text{ qt.}}{1} \cdot \frac{1 \text{ gal}}{4 \text{ qt}} = \frac{8}{4} = \boxed{2 \text{ gal.}}$$

2. 16 weeks to seconds

$$\frac{16 \text{ wk.}}{1} \cdot \frac{7 \text{ d.}}{1 \text{ wk.}} \cdot \frac{24 \text{ hr.}}{1 \text{ d.}} \cdot \frac{60 \text{ min.}}{1 \text{ hr.}} \cdot \frac{60 \text{ sec.}}{1 \text{ min.}}$$

3. 5,400 inches to miles

$$\frac{5,400 \text{ in.}}{1} \cdot \frac{1 \text{ ft.}}{12 \text{ in.}} \cdot \frac{1 \text{ m.}}{5280 \text{ ft.}} = \frac{5400}{63360} = \boxed{.085 \text{ miles}}$$

4. 2 Tons to Ounces

$$\frac{2 \text{ T.}}{1} \cdot \frac{2000 \text{ lb.}}{1 \text{ T.}} \cdot \frac{16 \text{ oz.}}{1 \text{ lb.}} = \boxed{64,000 \text{ oz}}$$

5. 4 pints to fl ounces

$$\frac{4 \text{ P.}}{1} \cdot \frac{2 \text{ c.}}{1 \text{ P.}} \cdot \frac{8 \text{ fl oz.}}{1 \text{ c.}} = \boxed{64 \text{ fl oz}}$$

6. 4000 Liters to mL

$$\frac{4000 \text{ L.}}{1} = 4,000,000 \text{ mL}$$

7. 250 mg to grams

$$\frac{250 \text{ mg}}{1} = \boxed{.25 \text{ grams}}$$

8. 8050 cm to km

$$\frac{8050 \text{ cm}}{1} = .0805 \text{ km}$$

II. Find the unit rate (include Units).

9. 160 words typed in 4 minutes

$$\frac{160 \text{ w}}{4 \text{ min}} = 40 \frac{\text{words}}{\text{min}}$$

10. Driving 180 km in 3 hours

$$\frac{180 \text{ km}}{3 \text{ hrs}} = 60 \frac{\text{km}}{\text{hr}}$$

11. A student worked five days per week and eight hours per day. He earned \$300 per week. What was his hourly rate of pay?

$$\frac{\$300}{5} = \$60/\text{day} \quad \frac{\$60}{8} = \boxed{\$7.5/\text{hr}}$$

III. Decide which is a better value based on the unit price.

2. 500 sheets of paper for \$9.45 or 4,500 sheets of paper for \$49

$$\frac{9.45}{500} = .019 \quad \frac{49}{4,500} = .012$$

4,500 for \$49 is better value

- ① write down what you are given
- ② multiply by a fraction (given unit will go on the bottom of the fraction) (conversion ~~unit~~ unit will go on top)
- ③ Repeat step 2 until you get unit asked in problem
- ④ multiply across top, multiply across bottom
- ⑤ divide