

Name: _____ Class: _____ Date: _____

8th Grade Pre-Algebra Section 5.4 Worksheet

Use conversion factors to find the following.

1. Convert 35,040 hours to years. 1 day = 24 hrs 1 yr = 365 days

$$\frac{35040 \cancel{\text{hrs}}}{1} \cdot \frac{1 \cancel{\text{day}}}{24 \cancel{\text{hrs}}} \cdot \frac{1 \cancel{\text{yr}}}{365 \cancel{\text{days}}} = \frac{35040}{24 \cdot 365} = \frac{35040}{8760} = \boxed{4 \text{ years}}$$

2. Convert 2.5 miles to inches. 1 mile = 5280 ft 1 ft = 12 inch

$$\frac{2.5 \cancel{\text{miles}}}{1} \cdot \frac{5280 \cancel{\text{ft}}}{1 \cancel{\text{mile}}} \cdot \frac{12 \cancel{\text{inch}}}{1 \cancel{\text{ft}}} = \frac{2.5 \cdot 5280 \cdot 12}{1} = \boxed{158,400 \text{ inches}}$$

3. Convert 16 weeks to seconds. 1 wk = 7 days 1 day = 24 hrs 1 hr = 3600 sec

$$\frac{16 \cancel{\text{wks}}}{1} \cdot \frac{7 \cancel{\text{days}}}{1 \cancel{\text{wk}}} \cdot \frac{24 \cancel{\text{hrs}}}{1 \cancel{\text{day}}} \cdot \frac{3600 \cancel{\text{sec}}}{1 \cancel{\text{hr}}} = \frac{16 \cdot 7 \cdot 24 \cdot 3600}{1} = \boxed{9676800 \text{ sec}}$$

4. Convert 45 miles/hour to feet/second. 1 mile = 5280 ft 1 hr = 3600 sec

$$\frac{45 \cancel{\text{miles}}}{1 \cancel{\text{hr}}} \cdot \frac{5280 \cancel{\text{ft}}}{1 \cancel{\text{mile}}} \cdot \frac{1 \cancel{\text{hr}}}{3600 \cancel{\text{sec}}} = \frac{45 \cdot 5280}{3600} = \frac{237600}{3600} = \boxed{66 \text{ ft/sec}}$$

5. Convert 53 yards/hour to inches/week. 1 yd = 3 ft 1 ft = 12 inch 1 day = 24 hrs 1 wk = 7 days

$$\frac{53 \cancel{\text{yds}}}{1 \cancel{\text{hr}}} \cdot \frac{3 \cancel{\text{ft}}}{1 \cancel{\text{yd}}} \cdot \frac{12 \cancel{\text{inch}}}{1 \cancel{\text{ft}}} \cdot \frac{24 \cancel{\text{hrs}}}{1 \cancel{\text{day}}} \cdot \frac{7 \cancel{\text{days}}}{1 \cancel{\text{wk}}} = \frac{53 \cdot 3 \cdot 12 \cdot 24 \cdot 7}{1} = \boxed{320544 \text{ inches/wk}}$$