

## Assignment – Dimensional Analysis (Distance)

Solve the following (show all of your work)

1. 3 yards = 9 feet

$$\frac{3 \text{ yards}}{1} \times \frac{3 \text{ feet}}{1 \text{ yards}} = \boxed{9 \text{ feet}}$$

2. 1 mile = 63,360 inches

$$\frac{1 \text{ mile}}{1} \times \frac{1,760 \text{ yards}}{1 \text{ mile}} \times \frac{3 \text{ feet}}{1 \text{ yds}} \times \frac{12 \text{ inches}}{1 \text{ foot}} = \frac{(1,760)(3)(12) \text{ inches}}{1} = \boxed{63,360 \text{ inches}}$$

3. 100 feet = 0.019 miles

$$\frac{100 \text{ feet}}{1} \times \frac{1 \text{ yds}}{3 \text{ feet}} \times \frac{1 \text{ mile}}{1,760 \text{ yds}} = \frac{100}{(3)(1,760)} \text{ miles}$$

$$\boxed{0.019 \text{ miles}}$$

4. 12 yards = \_\_\_\_\_ inches

$$\frac{12 \text{ yards}}{1} \times \frac{3 \text{ feet}}{1 \text{ yds}} \times \frac{12 \text{ inches}}{1 \text{ foot}} = (12)(3)(12) \text{ inches}$$

$$\boxed{432 \text{ inches}}$$

Solve the following (show all of your work)

5. 24 yards = 0.0136 miles

$$\frac{24 \text{ yards}}{1} \times \frac{1 \text{ miles}}{1,760 \text{ yards}} = \frac{24}{1,760} \text{ miles}$$

$$\boxed{0.0136 \text{ miles}}$$

6. 72 inches = 2 yards

$$\frac{72 \text{ inches}}{1} \times \frac{1 \text{ foot}}{12 \text{ inches}} \times \frac{1 \text{ yrd}}{3 \text{ feet}} = \frac{72}{(12)(3)} \text{ yards}$$

$$\boxed{2 \text{ yards}}$$

7. 2 1/2 miles = 13,200 feet

$$\frac{2.5 \text{ miles}}{1} \times \frac{1,760 \text{ yards}}{1 \text{ mile}} \times \frac{3 \text{ feet}}{1 \text{ yrd}} = (2.5)(1,760)(3) \text{ feet}$$

$$\boxed{13,200 \text{ feet}}$$

8. Johnny is on the football team at HHS. During the homecoming game, Johnny catches the opening kickoff on his own goal line. He then runs the ball all the way for a touchdown. How many inches did he run?

**Hint: football field is 100 yards**

$$\frac{100 \text{ yards}}{1} \times \frac{3 \text{ feet}}{1 \text{ yrd}} \times \frac{12 \text{ inches}}{1 \text{ foot}} = (100)(3)(12) \text{ inches}$$

$$\boxed{3,600 \text{ inches}}$$

Johnny ran 3,600 inches.