

1. Convert 221,760 inches to miles.

$$1 \text{ ft} = 12 \text{ inch}$$

$$1 \text{ mile} = 5280 \text{ ft}$$

$$\frac{221,760 \cancel{\text{ inch}}}{1} \cdot \frac{1 \cancel{\text{ ft}}}{12 \cancel{\text{ inch}}} \cdot \frac{1 \text{ mile}}{5280 \cancel{\text{ ft}}}$$

$$= \frac{221760 \cdot 1 \cdot 1}{1 \cdot 12 \cdot 5280} = \frac{221760}{63360} = \boxed{3.5 \text{ miles}}$$

2. Convert 54 yards to centimeters

$$1 \text{ yd} = 3 \text{ ft}$$

$$1 \text{ ft} = 12 \text{ inch}$$

$$1 \text{ inch} = 2.54 \text{ cm}$$

$$\frac{54 \cancel{\text{ yds}}}{1} \cdot \frac{3 \cancel{\text{ ft}}}{1 \cancel{\text{ yd}}} \cdot \frac{12 \cancel{\text{ inch}}}{1 \cancel{\text{ ft}}} \cdot \frac{2.54 \text{ cm}}{1 \cancel{\text{ inch}}}$$

$$= \frac{54 \cdot 3 \cdot 12 \cdot 2.54}{1 \cdot 1 \cdot 1 \cdot 1} = \boxed{4937.76 \text{ cm}}$$

3. Convert 50 miles/hour to inches/second

1 mile = 5280 ft  
1 ft = 12 inch  
1 hr = 3600 sec

$$\frac{50 \cancel{\text{miles}}}{1 \cancel{\text{hr}}} \cdot \frac{5280 \cancel{\text{ft}}}{1 \cancel{\text{mile}}} \cdot \frac{12 \cancel{\text{inch}}}{1 \cancel{\text{ft}}} \cdot \frac{1 \cancel{\text{hr}}}{3600 \cancel{\text{sec}}}$$

$$= \frac{50 \cdot 5280 \cdot 12 \cdot 1}{1 \cdot 1 \cdot 1 \cdot 3600} = \frac{3168000}{3600} = \boxed{880 \text{ inch/sec}}$$

4. Convert 53 yards/hour to inches/week

1 yd = 3 ft  
1 ft = 12 inch  
1 day = 24 hrs  
1 week = 7 days

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

$$= \frac{53 \cdot 3 \cdot 12 \cdot 24 \cdot 7}{1 \cdot 1 \cdot 1 \cdot 1 \cdot 1} = \boxed{320544 \text{ inch/wk}}$$