

Dimensional Analysis WS

Solve USING DIMENSIONAL ANALYSIS LINE METHOD.

Fill in any missing numbers, units or answers.

Name: _____

Period: _____

Seat # _____

1) Convert 32.7 in into ft

$$\frac{32.7 \text{ in}}{12 \text{ in}} \times \frac{1 \text{ ft}}{12 \text{ in}} = \quad \text{ft}$$

2) Convert 20.1 cm to in

$$\frac{20.1 \text{ cm}}{2.54 \text{ cm}} \times \frac{1 \text{ in}}{2.54 \text{ cm}} = \quad \text{in}$$

3) My cat, Harley, weighs 8.7 lbs. How much does she weigh in kilograms? **(3.95)**

$$\frac{8.7 \text{ lb}}{2.2 \text{ lb}} \times \frac{1 \text{ kg}}{2.2 \text{ lb}} = \quad \text{kg}$$

4) Convert 8.4 Kg into pounds

$$\frac{8.4 \text{ kg}}{2.2 \text{ kg}} \times \frac{2.2 \text{ lb}}{1 \text{ kg}} = \quad \text{lb}$$

5) Convert 3100 in to mi **(0.049)**

$$\frac{3100 \text{ in}}{12 \text{ in}} \times \frac{1 \text{ ft}}{12 \text{ in}} \times \frac{1 \text{ mi}}{5280 \text{ ft}} = \quad \text{mi}$$

6) Convert 14 weeks into seconds

$$\frac{14 \text{ weeks}}{1 \text{ week}} \times \frac{7 \text{ days}}{1 \text{ week}} \times \frac{24 \text{ hours}}{1 \text{ day}} \times \frac{60 \text{ minutes}}{1 \text{ hour}} \times \frac{60 \text{ seconds}}{1 \text{ minute}} = \quad \text{seconds}$$

Complete the rest of the problems below.

7) Convert 5.93 yards into mm **(Answer: 5422.4)**

8) You're throwing a pizza party for 15 people. Each person will eat 4 slices. You call up the pizza place and find that each pizza will be cut into 12 slices, and each pizza will cost you \$14.78. How much is the pizza going to cost you? You only have \$70. Will you have enough money? **(Answer: 73.90, no)**

- 9) The bedroom of a house is 1,200 cubic meters. We know that there are 3.4×10^9 particles of dust per cubic meter. How many particles of dust are present in the bedroom of our house? Eww!

- 10) Find out the weight of 6 billion (6,000,000,000) dust particles in pounds, if one dust particle has a mass of 7.53×10^{-10} g.