

Chapter 2 and 3 Exercise

- Express each of the following products in exponential form:
 - $3 \times 3 \times 3 =$
 - $2 \times 2 \times 2 \times 2 =$
 - $1/8 \times 1/8 =$
 - $1/4 \times 1/4 \times 1/4 \times 1/4 \times 1/4 \times 1/4 \times 1/4 =$
- Express each of the following products as a power of 10:
 - $10 \times 10 \times 10 \times 10 \times 10 \times 10 =$
 - $1/10 \times 1/10 \times 1/10 \times 1/10 =$
- Express the following ordinary numbers in scientific notation to 2 significant figures:
 - 368.78 g
 - 80.000 ml
 - 7009.4 mm
 - 0.000005355 cm
 - 0.095009 dg
 - 0.0004967000 km
- Write two unit equations for each of the following:
 - 1 mile = 1.61 km
 - 1 kg = 2.20 lbs
- Solve the following problems using unit analysis:
 - How many cups of orange juice are in 6.7 pints? (1 pint = 2 cups)
 - How many inches are in 219.6 cm? (1 inch = 2.54 cm)
 - How many months are in 0.36 years?
 - How many seconds are there 42 hours?
 - How many meters are there in 821 mm?
 - How many centiliters are there in 48.9 ml?
- Solve the following percent problems:
 - If a chemistry class has 55 students enrolled and only 42 students show-up to class on the first day, what percentage of students are dropped for not showing up?
 - A man has a rare coin collection that includes 35 pennies, 25 dimes, 12 nickles, and 15 silver dollars, what percentage of his collection are silver dollars?
 - A 3.927 g sample of brass contains 2.33 g of copper. What percent of copper is in the brass?
 - The Earth's crust has a mass of 2.37×10^{23} g and contains 49.2% oxygen, 25.7% silicon, and 7.50% aluminum. Calculate the mass of each element in the crust.