

1. A student measures the width of a wire to be 2.8 mm. How many nanometers is this?

[1] _____

2. How many significant digits are there in each of the following measurements?

- a) 4460 kg
b) 911.29 cm
c) 0.6040 g

[2] _____

3. A student determines the density of iron to be 8.59 g/cm^3 . The correct value is 7.87 g/cm^3 . Find the percent error in her measurement.

[3] _____

4. Convert each of the following quantities.

- a) 120 joules to calories
b) 4540 Calories to calories
c) 1.60 Calories to joules

[4] _____

5. The mass of an object is determined to be 38.9 kg. How many μg is this?

[5] _____

6. Do the following calculations and express the answer in the correct number of significant digits.

- a) $15.6 \text{ mL} + 29 \text{ mL} + 28.66 \text{ mL}$
b) $0.82 \text{ cm} \times 36.8 \text{ cm}$

[6] _____

7. Solve the following equation for the variable "c." Express your answer with the correct number of significant figures.

$$\frac{1.1}{c} = \frac{0.850}{750}$$

[7] _____

8. Perform the following operations:

a)
$$\frac{(8.45 \times 10^6 \text{ m})(4.60 \times 10^{-8} \text{ m})}{8.86 \times 10^{-9} \text{ m}}$$

b)
$$6.95 \times 10^{-3} \text{ g} + 3.01 \times 10^{-4} \text{ g}$$

[8] _____

9. Perform the following calculations and express your answer with the correct number of significant digits and in scientific notation.

a)
$$0.00774 \text{ km} + 0.00035 \text{ km}$$

b)
$$177 \text{ L/h} \times 1800 \text{ h}$$

[9] _____

Key Sheet

[1] 2,800,000 nanometers

a) 3

b) 5

[2] c) 4

[3] 9.15%

a) 29 calories

b) 4,540,000 calories

[4] c) 6690 joules

[5] 38,900,000,000 μg

a) 73 mL

[6] b) 30 cm^2

[7] 970

a) $4.39 \times 10^7 \text{ m}$

[8] b) $7.25 \times 10^{-3} \text{ g}$

a) $8.09 \times 10^{-3} \text{ km}$

[9] b) $3.2 \times 10^5 \text{ L}$