

Name: Key.

Physics 20: Pre-Requisite Skills

1. Unit Conversion.

a. Convert 36 km to cm.

$$3600000\text{cm}$$

d. Convert 50 g to kg.

$$0.05\text{kg}$$

b. Convert 45 kg to mg.

$$45000000\text{mg}$$

e. Convert 54 L to mL

$$54000\text{mL}$$

c. Convert 85 hm to m.

$$8500\text{m}$$

f. Convert 2.5×10^{15} nm to mm

$$2.5 \times 10^9 \text{ mm}$$

2. Significant digits - state the number of significant digits in these measurements.

a) 3405 - 4

d) 0.0020 - 2

b) 0.042 - 2

e) 1.002×10^3 - 4

c) 0.000 56 - 2

f) 0.002501×10^{-2} - 4

3. Evaluate. Record your answer to the correct number of sig digs.

a) $10.0 \times 5.3 =$ 53

e) $0.5 / 24.5 =$ 0.02

b) $0.10 \times 122 =$ 12

f) $25 \times 1.5 =$ 38

c) $50.5 \times 0.62 =$ 31

g) $0.000 2 \times 2500 =$ 0.5

d) $100 / 45 =$ 2.2

i) $2230 / 3.00 =$ 743

4. Using three significant figures for each, express the following in scientific notation:

a) 0.008 051

$$8.05 \times 10^{-3}$$

c) 0.0051365

$$5.14 \times 10^{-3}$$

b) 6 100 000

$$6.10 \times 10^6$$

d) 0.000 009 40

$$9.40 \times 10^{-6}$$

5. Change each of the following back to its non-exponential form:

a) 7.64×10^{-6}

$$0.00000764$$

c) 3.8×10^{-2}

$$0.038$$

b) 1.00×10^{-3}

$$0.001$$

d) 2.19×10^9

$$2190000000$$