

Mixed Review*The Science of Physics*

Power	Prefix	Abbreviation
10^{-18}	atto-	a
10^{-15}	femto-	f
10^{-12}	pico-	p
10^{-9}	nano-	n
10^{-6}	micro-	μ
10^{-3}	milli-	m
10^{-2}	centi-	c

Power	Prefix	Abbreviation
10^{-1}	deci-	d
10^1	deka-	da
10^3	kilo-	k
10^6	mega-	M
10^9	giga-	G
10^{12}	tera-	T
10^{15}	peta-	P
10^{18}	exa-	E

1. Convert the following measurements to the units specified.

- 2.5 days to seconds _____
- 35 km to millimeters _____
- 43 cm to kilometers _____
- 22 mg to kilograms _____
- 671 kg to micrograms _____
- 8.76×10^7 mW to gigawatts _____
- 1.753×10^{-13} s to picoseconds _____

2. According to the rules given in Chapter 1 of your textbook, how many significant figures are there in the following measurements?

- 0.0845 kg _____
- 37.00 h _____
- 8 630 000.000 mi _____
- 0.000 000 0217 g _____
- 750 in. _____
- 0.5003 s _____

3. Without calculating the result, find the number of significant figures in the following products and quotients.

a. 0.005032×4.0009 _____

b. $0.0080750 \div 10.037$ _____

c. $(3.52 \times 10^{-11}) \times (7.823 \times 10^{11})$ _____

4. Calculate $a + b$, $a - b$, $a \times b$, and $a \div b$ with the correct number of significant figures using the following numbers.

a. $a = 0.005\ 078$; $b = 1.0003$

$a + b =$ _____ $a - b =$ _____

$a \times b =$ _____ $a \div b =$ _____

b. $a = 4.231\ 19 \times 10^7$; $b = 3.654 \times 10^6$

$a + b =$ _____ $a - b =$ _____

$a \times b =$ _____ $a \div b =$ _____

5. Calculate the area of a carpet 6.35 m long and 2.50 m wide. Express your answer with the correct number of significant figures.

6. The table below contains measurements of the temperature and volume of an air balloon as it heats up.

In the grid at right, sketch a graph that best describes these data.

Temperature (°C)	Volume (m ³)
2	0.0502
27	0.0553
52	0.0598
77	0.0646
102	0.0704
127	0.0748
152	0.0796

