The Science of Physics

HOLT PHYSICS
Mixed Review

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.

   a. 2.5 days to seconds _____

   b. 35 km to millimeters _____

   c. 43 cm to kilometers _____

   d. 22 mg to kilograms _____

   e. 671 kg to micrograms _____

   f. 8.76×10^{7} mW to gigawatts _____

   g. 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?

   a. 0.0845 kg _____

   b. 37.00 h _____

   c. 8 630 000.000 mi _____

   d. 0.000 000 0217 g _____

   e. 750 in. _____

   f. 0.5003 s _____

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Mixed Review *continued*

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 (m³)
2	0.0502
27	0.0553
52	0.0598
77	0.0646
102	0.0704
127	0.0748
152	0.0796