

1. A student's weight displayed on a digital scale is 117.2 lb. This would suggest her weight is
- (a) within 1% of 117.2 lb.
 - (b) exactly 117.2 lb.
 - (c) somewhere between 117.18 and 117.22 lb.
 - (d) somewhere between 117.0 and 117.4 lb.
2. Four students use different instruments to measure the length of the same pen. Which measurement implies the greatest precision?
- (a) 160.0 mm.
 - (b) 16.0 cm.
 - (c) 0.160 m.
 - (d) 0.00016 km.
 - (e) Need more information.
3. The number 0.0078 has how many significant figures?
- (a) 1.
 - (b) 2.
 - (c) 3.
 - (d) 4.
4. How many significant figures does $1.362 + 25.2$ have?
- (a) 2.
 - (b) 3.
 - (c) 4.
 - (d) 5.

1. (I) How many significant figures do each of the following numbers have: (a) 214, (b) 81.60, (c) 7.03, (d) 0.03, (e) 0.0086, (f) 3236, and (g) 8700?
2. (I) Write the following numbers in powers of 10 notation: (a) 1.156, (b) 21.8, (c) 0.0068, (d) 328.65, (e) 0.219, and (f) 444.
3. (I) Write out the following numbers in full with the correct number of zeros: (a) 8.69×10^4 , (b) 9.1×10^3 , (c) 8.8×10^{-1} , (d) 4.76×10^2 , and (e) 3.62×10^{-5} .
4. (II) The age of the universe is thought to be about 14 billion years. Assuming two significant figures, write this in powers of 10 in (a) years, (b) seconds.
5. (II) What is the percent uncertainty in the measurement 5.48 ± 0.25 m?

6. (II) Time intervals measured with a stopwatch typically have an uncertainty of about 0.2 s, due to human reaction time at the start and stop moments. What is the percent uncertainty of a hand-timed measurement of (a) 5.5 s, (b) 55 s, (c) 5.5 min?
7. (II) Add $(9.2 \times 10^3 \text{ s}) + (8.3 \times 10^4 \text{ s}) + (0.008 \times 10^6 \text{ s})$.
8. (II) Multiply $3.079 \times 10^2 \text{ m}$ by $0.068 \times 10^{-1} \text{ m}$, taking into account significant figures.
9. (II) What, approximately, is the percent uncertainty for a measurement given as 1.57 m^2 ?