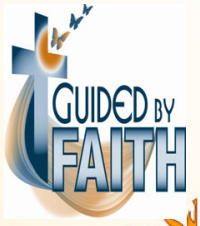
Sig Fig

Significant figures are used to declare the uncertainty of measurement.

38 means precise between 37.5 and 38.4

38.00 means precise between 37.995 and 38.004



Sep 1 - 8:18 AM

How many sig fig does each number have?

0.0760 g	1.0060 L	0.000000321 m
$12,000	$12,000.00	$12,000.
0.3003 cm	100 mL	100. mL

Significant figures are also used in problem solving of equations. Here are some rules for that.

- All non-zero numbers are significant.
  315.2 has 4 sig figs

- When a 0 is significant or not, refer to the following table:

Significant

middle zeros ALWAYS count
  20**9** has 3 sig figs
  1**000**5 has 5 sig figs

ending zeros WITH a decimal point are significant
  4**00**. has 3 sig figs
  2**0.00** has 4 sig figs
  .4**00** has 3 sig figs

Not significant

- **beginning zeros** are NEVER significant
  0.000125 has 3 sig figs
  0.002 has 1 sig fig

- **ending** zeros without a decimal are NOT significant
  4**00** has 1 sig fig
  25**00** has 2 sig figs

Any defined or counted number, like number of laps, has no uncertantity therefore it does not determine sig fig. Think of it as an exact number "infinite sig fig"

10 kg weight= $10.\overline{0}$ used to show infinite sig fig on a 0 in the tenths place

Any conversion factor is an exact conversion. Any number in the conversion
should be considered to have "infinite sig fig." Your answer should have the
same number of sig fig you started with.

A runner runs 4 laps around the track, each lap takes 63.2s. How long does it take the runner to finish the race?

How many sig fig should your answer have?

What number determines correct sig fig?

Feb 2 - 9:26 AM

Which of these numbers has 2 sig fig?

20. 2.0×10^1

20 $2\overline{0}$ $2\overline{0}0$

Sep 11-7:28 AM

Scientific Notation

3.45×10^{7}

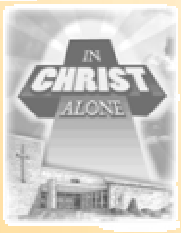
coefficient base exponent

http://www.fordhamprep.org/gcurran/sho/sho/lessons/lesson25.htm

http://www.fordhamprep.org/gcurran/sho/sho/worksheets/worksht25b.htm

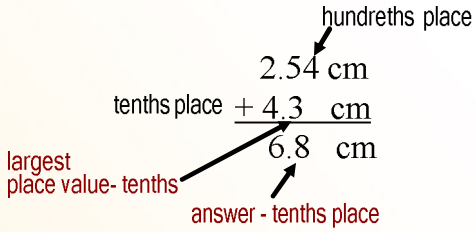
Practice How many sig Fig?

1. 2808 m
2. 3.65 s
3. 0.003 cm
4. 0.00034 kg
5. 450 mm
6. 45.0 cm
7. 4.5×10^{1} cm
8. 0.045 m
9. 6.02×10^{23} particles
10. 3,000 m
11. 0.004560 J
12. 6.25×10^{18} electrons



Adding and subtracting sig fig

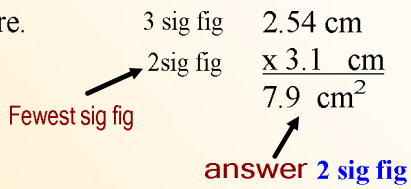
Line up the decimal points. Use the largest place value.



Multiplying and dividing sig fig

Use the number of Sig Figs from the least accurate measure.

How many sig fig?



When you perform any arithmetic operation, it is important to remember that the answer can never be more precise than the least accurate measure

Solve with the correct sig fig.

1. **8.40 + 7.006=**
2. **300 + 25=**
3. **400.0 + 250=**
4. **600-23=**
5. **25 x 4=**
6. **25 x 4.0=**
7. **340 x 1=**
8. **2 x 6 =**
9. **42.3- 20=**
10. **15/3.0=**