

WS 2.2 Significant Figures!

Name: _____ P. _____

For this entire worksheet, only use scientific notation if it is necessary for showing the correct number of sig. figs, or if you are instructed to use it!

1. Round or rewrite the given number so that it has 3 sig. figs., and so it has 2 sig. figs.

Number	with 3 s.f.	with 2 s.f.
900	<u>900.</u>	<u>9.0×10^2</u>
60000	<u>6.00×10^4</u>	<u>6.0×10^4</u>
61111	<u>61100</u>	<u>61000</u>
0.03	<u>0.0300</u>	<u>0.030</u>
5600	<u>5.60×10^3</u>	<u>5600</u>
1300.9821	<u>1.30×10^3</u>	<u>1300</u>
0.0603779	<u>0.0604</u>	<u>0.060</u>
5000	<u>5.00×10^3</u>	<u>5.0×10^3</u>
7481	<u>7480</u>	<u>7500</u>
7401	<u>7.40×10^3</u>	<u>7400</u>
2.3790	<u>2.38</u>	<u>2.4</u>
3030	<u>3030</u>	<u>3.0×10^3</u>

2. Multiplication and Division!

Look at all the given numbers and count how many significant figures they each have. Determine how many sig. figs. are in the given number with the fewest sig. figs. Round/report your answer to that number of significant figures.

5.1105

	Calculator Answer:	Correct sig. fig. answer:
78.3 / 1.42	= 111.186	<u>111</u>
6.28 5.1105×2.3	= 11.7531	<u>12</u>
28.71 / 25.2	<u>1.1438247</u>	<u>1.14</u>
48.82 / 24.41	<u>2</u>	<u>2.000</u>
60. / 0.0100	<u>6000</u>	<u>6.0×10^3</u>

3. Addition and Subtraction:

Look at all the given numbers and determine the precision of each number. For example, Is it reported to the tens' place?
 ones' place?
 one tenth (1 decimal place)
 one hundredth (2 decimal places)
 one thousandth? (3 decimal places)

Determine which number is reported to the least precision (for example, the fewest number of decimal places.) Round/report your answer to the same precision as the least precise number.

	Calculator Answer:	Correct sig. fig. answer:
35.12 + 2.3	= 37.42	<u>37.4</u>
6.3 + 3.7	= 10	<u>10.0</u>
6.8 + 102	= 108.8	<u>109</u>
16.387 - 1.2	= 15.187	<u>15.2</u>
116.92 - 114.72	= 2.2	<u>2.20</u>

4. Mixed Practice! Make the following calculations, and then round/report your answer to the correct number of significant figures.

	Calculator Answer	Correct sig. fig. answer
$126.2 + 4.41$	$= 130.61$	<u>130.6</u>
$146.72 * 7.96$	$= 1167.8912$	<u>1170</u>
$364.8 / 4.56$	$= 80$	<u>80.0</u>
$36480 / 4.56$	$= 8000$	<u>8.00×10^3</u>
$230.2 - 7.2$	$= 223$	<u>223.0</u>
2.49×86.72	$= 215.9328$	<u>216</u>
2.49×2008.1	$= 5000.169$	<u>5.00×10^3</u>
$50.9 + 80.7$	$= 131.6$	<u>131.6</u>
$14.181 - 3.12$	<u>11.061</u>	<u>11.06</u>
$14.181 + 3.12$	<u>17.301</u>	<u>17.30</u>
$14.18 / 13.21$	<u>1.073429</u>	<u>1.073</u>
$15000. / 0.25$	<u>60000</u>	<u>6.0×10^4</u>
$14.18 * 13.21$	<u>187.3178</u>	<u>187.3</u>
$3.42 - 2.62$	<u>0.8</u>	<u>0.80</u>
$12621 / 42.07$	<u>300</u>	<u>300.0</u>
$62100 / 1.5525$	<u>40000</u>	<u>4.00×10^5</u>

5. Formula writing review: Fill in the missing name or formula for each compound. Be sure to name it according to the correct system (ionic or covalent)

CoBr₂ cobalt bromide
 SBr₂ sulfur dibromide
 lithium thiosulfate Li₂S₂O₃
 cobalt arsenate Co₃(AsO₄)₂
 NO nitrogen monoxide
 BaO barium oxide
 PbO Lead (II) oxide
(plumbous oxide)

dinitrogen pentoxide N₂O₅
 triboron heptasulfide B₃S₇
 Br₂O dibromine monoxide
 Ag₂O silver oxide
 SiF₄ silicon tetrafluoride
 CS₂ carbon disulfide
 chromium IV oxide CrO₂
 strontium hypochlorite Sr(ClO)₂

Each chemical equation below shows two elements reacting to form a compound. For each reaction:

- classify the compound(s) that form as ionic or covalent.
- name the compound(s) that form in the reaction.
- state whether the each reacting element will need to gain, lose, or share electrons to bond in the compound.
- If electrons are lost or gained, indicate which element will gain electrons and which will lose electrons.

