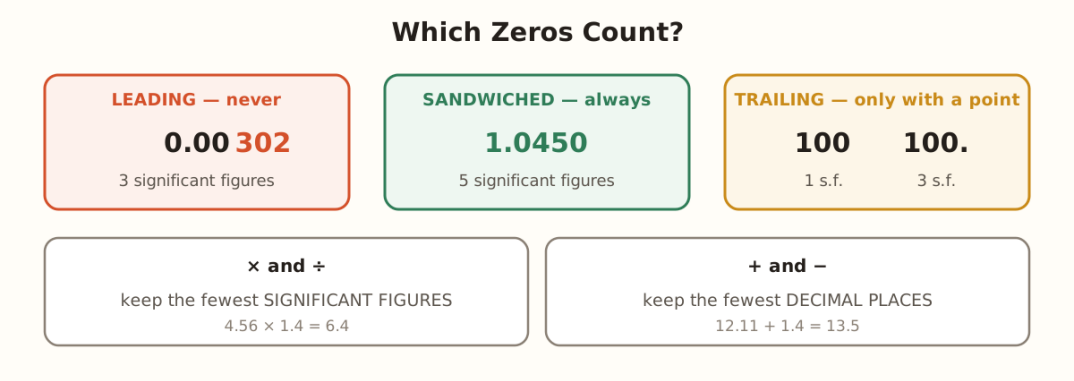
Significant Figures Worksheet

Grade 11 Chemistry · counting, rounding and the two rules

Name: Date: Score: / 24



Before you start: the two arithmetic rules are different. Multiplying and dividing keeps the fewest significant figures; adding and subtracting keeps the fewest decimal places. Using the wrong one is the usual error.

Part A · how many significant figures?

#	Number	Significant figures
1	4.56	
2	0.00302	
3	100	
4	100.	
5	1.0450	
6	20300	
7	0.0500	
8	6.02×10^{23}	
9	7000.0	
10	0.9	

Part B · round as instructed

#	Number	Round to	Answer
11	3.14159	3	
12	0.0045678	2	
13	12345	2	
14	9.8765	4	

#	Number	Round to	Answer
15	0.1055	3	
16	2.0449	3	

Part C · multiply or divide

#	Calculation	Answer, correctly rounded
17	4.56 × 1.4	
18	12.0 ÷ 3.00	
19	0.0025 × 400.	
20	89.4 ÷ 2.1	

Part D · add or subtract — a different rule applies

#	Calculation	Answer, correctly rounded
21	12.11 + 1.4	
22	100.0 − 2.56	
23	0.123 + 0.4	
24	56.7 − 0.321	

Answer Key

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Part A

#	Number	s.f.	Why
1	4.56	**3**	every digit is significant
2	0.00302	**3**	leading zeros never count
3	100	**1**	no decimal point, so trailing zeros do not count
4	100.	**3**	the decimal point makes the trailing zeros count
5	1.0450	**5**	the decimal point makes the trailing zeros count
6	20300	**3**	no decimal point, so trailing zeros do not count
7	0.0500	**3**	leading zeros never count
8	6.02×10^{23}	**3**	every digit is significant
9	7000.0	**5**	the decimal point makes the trailing zeros count
10	0.9	**1**	leading zeros never count

Part B

#	Number	to	Answer
11	3.14159	3 s.f.	**3.14**
12	0.0045678	2 s.f.	**0.0046**
13	12345	2 s.f.	**12000**
14	9.8765	4 s.f.	**9.877**
15	0.1055	3 s.f.	**0.106**
16	2.0449	3 s.f.	**2.04**

Part C · fewest significant figures wins

#	Working	Answer
17	4.56 has 3 s.f., 1.4 has 2 → round to 2	**6.4**
18	12.0 has 3 s.f., 3.00 has 3 → round to 3	**4.00**
19	0.0025 has 2 s.f., 400. has 3 → round to 2	**1.0**
20	89.4 has 3 s.f., 2.1 has 2 → round to 2	**43**

Part D · fewest decimal places wins

#	Working	Answer
21	12.11 has 2 d.p., 1.4 has 1 → round to 1 d.p.	**13.5**
22	100.0 has 1 d.p., 2.56 has 2 → round to 1 d.p.	**97.4**
23	0.123 has 3 d.p., 0.4 has 1 → round to 1 d.p.	**0.5**
24	56.7 has 1 d.p., 0.321 has 3 → round to 1 d.p.	**56.4**