

Unit 1 • Observations, Models, & Experiments

UNCERTAINTY WORKSHEET

Use the rules for \pm notation of uncertainty to answer the following:

	Answer before rounding	Final answer
Example: $(22.2 \pm .2) + (108.66 \pm .05)$	$130.86 \pm .25$	$130.9 \pm .3$
1. $(44.8 \pm .7) + (98.66 \pm .05) =$	_____	_____
2. $(88.64 \pm .02) + (53.8 \pm 0.4) =$	_____	_____
3. $(245.871 \pm .001) + (78.88 \pm .05) =$	_____	_____
4. $(952.90 \pm .09) - (458.34 \pm .05) =$	_____	_____
5. $(3.8 \pm .2) + (54.67 \pm .05) - (72.126 \pm .005) =$	_____	_____
6. $(528.11 \pm .05) - (247.65 \pm .02) =$	_____	_____
7. $(1468.23 \pm .05) + (3.426 \pm .001) =$	_____	_____
8. $(3.011 \pm .001) - (1.4772 \pm .0001) =$	_____	_____

Example $(22.2 \pm .2) \times (108.66 \pm .05)$	base 2412.252	max 2435.104	diff. 22.852
	Answer before rounding	Final Answer	
	2412.252 ± 22.852	2410 ± 20	
9. $(44.8 \pm .7) \times (98.66 \pm .05) =$	_____	_____	
10. $(88.64 \pm .02) \div (53.8 \pm .7) =$	_____	_____	
11. $(245.871 \pm .001) \times (78.88 \pm .05) =$	_____	_____	
12. $(952.90 \pm .07) \div (458.340 \pm .005) =$	_____	_____	
13. $(3.8 \pm .2) \times (54.67 \pm .05) \div (.67 \pm .04) =$	_____	_____	
14. $(5.26 \pm .07) \times (11.68 \pm .05) =$	_____	_____	
15. $(10224.1 \pm .5) \div (552.14 \pm .05) =$	_____	_____	

Use the rules for significant figures to report uncertainty for the following:

	Answer before rounding	Final Answer
Example $134.8 + 27.67 =$	162.47	162.5
16. $109.5 + 24.02 =$	_____	_____
17. $66.341 + 902.10 =$	_____	_____
18. $88.001 - 56.7 =$	_____	_____
19. $5696.10 - 34.0010 =$	_____	_____
20. $32.1 + 354.98 - 224.775 =$	_____	_____
21. $412.667 + 22.11 + 15.6 =$	_____	_____
22. $5286.445 - 26.0005 - 13.112 =$	_____	_____
23. $3.468 - 2.4 + 13.67 - 117.11119 =$	_____	_____

	Answer before rounding	Final Answer
Example $34.8 \times 27.67 =$	962.916	963
24. $109.5 \times 24.02 =$	_____	_____
25. $66.341 \times 902.10 =$	_____	_____
26. $88.001 \div 56.7 =$	_____	_____
27. $5696.10 \times 34.0010 =$	_____	_____
28. $32.1 \times 354.98 \div 224.775 =$	_____	_____
29. $1.68 \times 2.45 \div 5.912 =$	_____	_____
30. $432.721 \div 13.2467 \div 21.44 =$	_____	_____