

Feb 8, 2019

1) Significant Digits cont

- Answers to HW #25-30

- +/- and \times/\div with SD

Warm-Up

Round each of the following to 2SD

1) 23456789

23000000

2) 0.0245

0.025

3) 28.567

29

4) 12345

12000

Rounding: Round each of the following to 3 and 4 SD

	3SD	4SD
25) 3.14159	3.14	3.142
26) 742 396	742 000	742 400
27) 0.0028956	0.00290	0.002896
28) 2589700	2590000	2590000
29) 231.45	231	231.5
30) 0.048752	0.0488	0.04875

Addition and Subtraction

Add or subtract the numbers as usual, then you round the answer to the same number of decimal places as the value with the fewest decimal places.

i.e. if given 3 distances and asked to find the total distance

$$D_1 = 106.7\text{km} \quad D_2 = 14\text{km} \quad D_3 = 0.59\text{km}$$

$$\begin{aligned} D_{\text{total}} &= D_1 + D_2 + D_3 \\ D_{\text{total}} &= 106.7\text{km} + 14\text{km} + 0.59\text{km} \\ D_{\text{total}} &= 121.29\text{km} \\ D_{\text{total}} &= \underline{121 \text{ km}} \text{ (correct answer with SD)} \end{aligned}$$

The lowest number of decimal places is none, therefore the answer is 121km.

Try a few

Record each of these in your notebook and determine the answer and write it in the correct number of significant digits.

- | | calculator
answer | correct answer
using SD |
|---|----------------------|----------------------------|
| 1) $12.54 + 8.56 + 9 =$ | <input type="text"/> | <input type="text"/> |
| 2) $3.1\text{km} + 2.45\text{km} + 2.195\text{ km} =$ | <input type="text"/> | <input type="text"/> |

Multiplying and Dividing

Multiply or divide as usual, then round the answer to have the same significant digits as the measurement with the fewest significant digits.

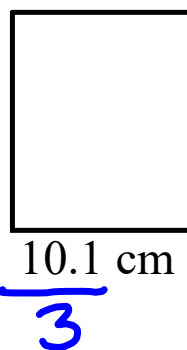
i.e. Area = length x width

$$\text{Area} = 3.2\text{cm} \times 10.1 \text{ cm}$$

$$\text{Area} = 32.32 \text{ cm}^2$$

$$\text{Area} = \underline{\underline{32\text{cm}^2}}$$

3.2cm
②



$$A = l \times w$$

The correct way to write this would be 32 cm² because two significant figures is the lowest number in the question.

Try a few

Record each of these in your notebook and determine the answer and write it in the correct number of significant digits.

	calculator answer	correct answer using SD
1) $1.23 \text{ m} \times 0.89 \text{ m} =$	<input type="text"/>	<input type="text"/>
3) $452 \text{ m} \div 5 \text{ s} =$	<input type="text"/>	<input type="text"/>

Significant Digits Worksheet #13-24