

# SIGNIFICANT FIGURES

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The answer to “*What should I round to?*”

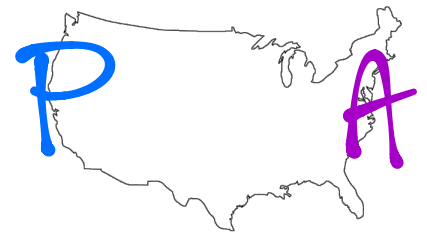
‘Sig Fig’: A measured number plus one guess digit

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Quick geography review...



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Pacific/Atlantic Rule

① DRAW AN ARROW until you hit a non-zero #

- Start from the Pacific if... a decimal is present

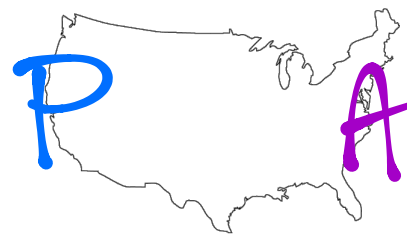
EX: ~~0.00~~ → 910235

- Start from the Atlantic if... a decimal is absent

EX: 14,010,000

② Every # not covered by the arrow is significant

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Determine the number of sig figs in...

a. ~~0.000~~15045 **5**

f. ~~0.0~~300001 **6**

b. 4,~~600,000~~ **2**

g. 12,~~000~~ **2**

c. 2406 **4**

h. ~~2400~~.100 **7**

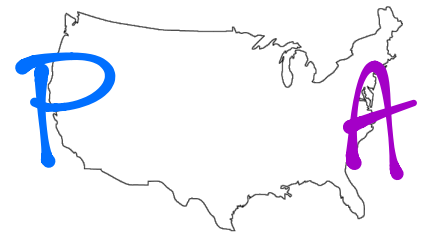
d. ~~200~~.00 **5**

i. 708,009,~~000~~ **6**

e. ~~0.00000~~5 **1**

j. 3,65~~0~~ **3**

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Round the following to 3 sig figs...

a. 173,792 ~~173,792~~ 174,000

c. ~~0.0003192~~ 0.00319 0.00319

b. ~~0.0025021~~ 0.00250 0.00250

d. ~~30.0~~ 30.0

Round the following to 4 sig figs...

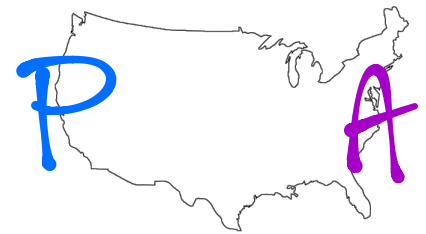
a. 249,441 ~~249,441~~ 249,400

c. 12,049,002 ~~12,049,002~~ 12,050,000

b. ~~0.00250122~~ 0.002501 0.002501

d. ~~0.00200210~~ 0.002002 0.002002

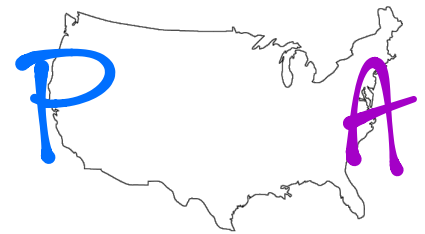
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## Multiplication/Division Rule

1. Count the number of sig figs in each number
2. Do math as normal
3. Round the answer to *the fewest # of sig figs (from step 1)*

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Perform the following calculations...

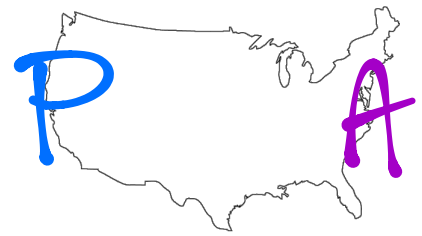
a.  $\overset{5}{\rightarrow} 12.470 \times 270 \overset{2}{\leftarrow} = 3,366.9$  3,400

b.  $36,000 \overset{2}{\leftarrow} \div 1245 \overset{4}{\leftarrow} = 28.91566$  29

c.  $\overset{4}{\rightarrow} 310.0 \times 12 \overset{2}{\leftarrow} = 3,720$  3,700



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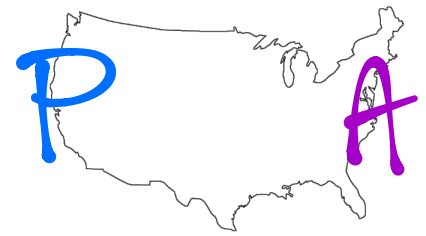
Perform the following calculations...

$$d. \overset{4}{\rightarrow} 129.6 \div \overset{\textcircled{1}}{\leftarrow} 3 = \overset{-}{43.2} \quad \boxed{40}$$

$$e. 125 \overset{\textcircled{3}}{\leftarrow} \overset{\textcircled{5}}{\rightarrow} 1.4452 = \overset{-}{180.65} \quad \boxed{181.}$$

$$f. \overset{\textcircled{1}}{\leftarrow} \overset{\textcircled{0}}{\leftarrow} \overset{\textcircled{0}}{\leftarrow} \overset{\textcircled{0}}{\leftarrow} \overset{\textcircled{3}}{\rightarrow} 2.53 = \overset{-}{2,371.5415} \quad \boxed{2,000}$$

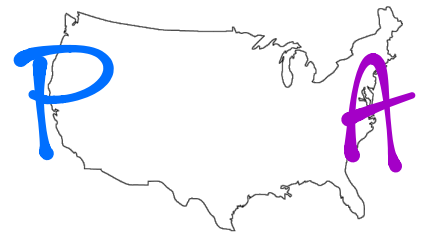
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## Addition/Subtraction Rule

1. Put a 'hat' over the last sig fig in each number
2. Do math as normal
3. Round the answer to the least specific decimal place (from step 1)

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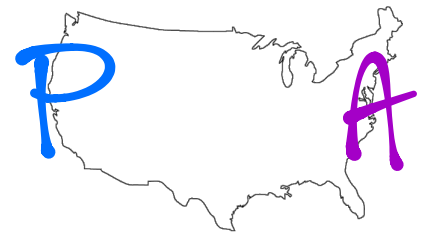
Perform the following calculations...

a.  $\rightarrow 24.\overline{28} + \rightarrow 12.\overline{5} = 36.\overline{78}$  36.8

b.  $12\overline{0,000} + 4\overline{20} = 12\overline{0,420}$  120,000

c.  $140,\overline{100} - 14\overline{22} = 13\overline{8,678}$  138,700

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Perform the following calculations...

d.  $2.2\bar{4} - 0.410\bar{1} = 1.8299$  1.83

e.  $12,47\bar{0} + 2200.4\bar{4} = 14,670.44$  14,670

f.  $45\bar{0} + 12.8 = 462.8$  460