E: Applying Integer Operations

BEDMAS
Brackets
Exponents
Division
Multiplication
Addition
Subtraction

* You can change the order of divide & multiply -or- add & subtract *

SIGN RULES

$+ \times + = +$ $\quad + \div + = +$

$- \times - = +$ $\quad - \div - = +$

$+ \times - = -$ $\quad + \div - = -$

Examples:

1. Calculate.

a) $(-3) \times [(+11) - (+9)] + (-8)$ Brackets $(+11) - (+9)$ 1st!

$= (-3) \times (+2) + (-8)$ Multiply $(-3) \times (+2)$ 2nd! $- \times + = -$

$= -6 + (-8)$ Add last!

$= -14$

b) $(-4) + (-36) \div (+4) \div (-3)$ Division $(-36) \div (+4)$. * $- \div + = -$

$= (-4) + (-9) \div (-3)$ Division $(-9) \div (-3)$ * $- \div - = +$

$= (-4) + (+3)$ Add

$= -1$

c) $-20 \div 10 + 4 \times (-5)$ Division $-20 \div 10$ * $- \div + = -$

$= -2 + 4 \times (-5)$ Multiply $4 \times (-5)$ * $+ \times - = -$

$= -2 + (-20)$ Add

$= -22$

1) $26 + (-11) - 4 \times [3 - (-3)]$ Brackets. $[3-(-3)]$

$= 26 + (-11) - 4 \times (+6)$ Multiply $-4 \times (+6)$ * $- \times + = -$

$= 26 + (-11) - 24$ Add $26 + (-11)$

$= 15 - 24$ Subtract $15 - 24$

$\boxed{= -9}$

2. The daily lows for five days were $-5°C, +2°C, -3°C, +2°C,$ and $-7°C$. What is the mean of these temperatures?

* mean is the average.

To get an average add all numbers ÷ divide by total numbers!

$$\text{mean} = \frac{[(-5) + (+2) + (-3) + (+2) + (-7)]}{5}$$

← is the same as dividing!

5 ← because there are 5 temperatures.

$$\text{mean} = \frac{[(-3) + (-3) + (+2) + (-7)]}{5}$$

$$= \frac{[(-6) + (+2) + (-7)]}{5}$$

$$= \frac{[(-4) + (-7)]}{5}$$

$$= \frac{(-11)}{5}$$

$\boxed{= -2.2°C}$

I did the additions one at a time. If you are comfortable you can add them all in one step!

⇑ Do not round unless you are asked to and don't forget your °C units.

3. Over a twenty-year period the population of Edmonton rose from 585000 to 1 000 010. What was the mean population change per year?

First find the total change in population:

$$\begin{array}{r} 1\,000\,010 \\ -\ 585\,000 \\ \hline 415\,010 \end{array}$$

Find the change per year by dividing by 20yrs, (given in question)

$$= \frac{415\,010}{20}$$

$= 20\,750.5$ * can't have .5 of a person so round down.

$= 20\,750$ (positive because population increases)

Answer with a sentence!

The mean population change is an increase of 20 750 people per year.

Assignment: Pg. 315 # 4 – 10