

22.2.11

Which is Bigger?

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 $2n+3 > n+10$ if:

$$2n+3 - (n+10) > 0$$

$$\text{or } 2n+3 - n - 10 > 0$$

$$\text{or } n - 7 > 0$$

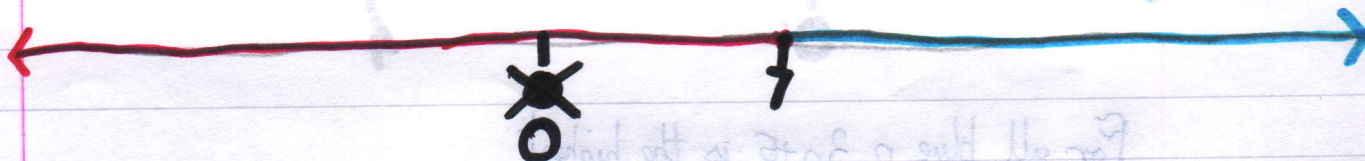
$$\text{or } n > 7$$

$$\therefore n > 7 \Rightarrow 2n+3 > n+10,$$

$$n < 7 \Rightarrow 2n+3 < n+10$$

$$\text{and } n = 7 \Rightarrow 2n+3 = n+10$$

They come to different conclusions because Charlie chose a number less than 7 and Alison chose a number greater than 7.



$$\text{blue } n \Rightarrow 2n+3 > n+10$$

$$\text{red } n \Rightarrow 2n+3 < n+10$$

 $4n+11 > 2n+7$ if:

$$4n+11 - (2n+7) > 0$$

$$\text{or } 4n+11 - 2n - 7 > 0$$

$$\text{or } 2n+4 > 0$$

$$\text{or } 2n > -4$$

$$\text{or } n > -2$$

$$\therefore n > -2 \Rightarrow 4n+11 > 2n+7$$

$$n < -2 \Rightarrow 4n+11 < 2n+7$$

$$n = -2 \Rightarrow 4n+11 = 2n+7$$

 $3(2n+4) > 2(3n+4)$ if

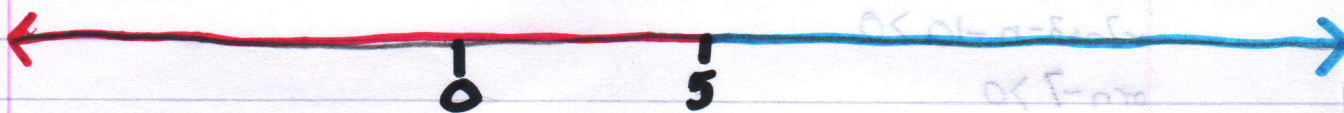
$$6n+12 - 6n - 8 > 0$$

$$\text{or } 4 > 0$$

$$\therefore 3(2n+4) > 2(3n+4) \text{ for all } n$$

$$2(3n+3) = 3(2n+2) \text{ for all } n.$$

2 expressions are $3n+12$, $2n+17$



For all blue n $3n+12 > 2n+17$

For all red n $2n+17 > 3n+12$

3 expressions are $3n+5$, $4n+5$, $5n+1$

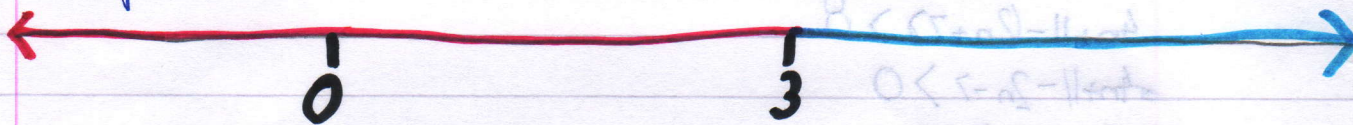


For all blue n $3n+5$ is the highest

For all red n $4n+5$ is the highest

For all green n $5n+1$ is the highest

3 expressions are $n+4$, $2n+1$, $2n$



For all red n $n+4$ is the highest. $2n$ is never the highest

For all blue n $2n+1$ is the highest.

The 3 expressions are x, y, z . C, k are constants

$$x-y = c$$

$$x-z = k$$

$$x-y = c$$

$$x+z = k$$

$$z-y = c-k$$

or $z-y$ is a constant

My 3 expressions are $n, n+1, n+2$.