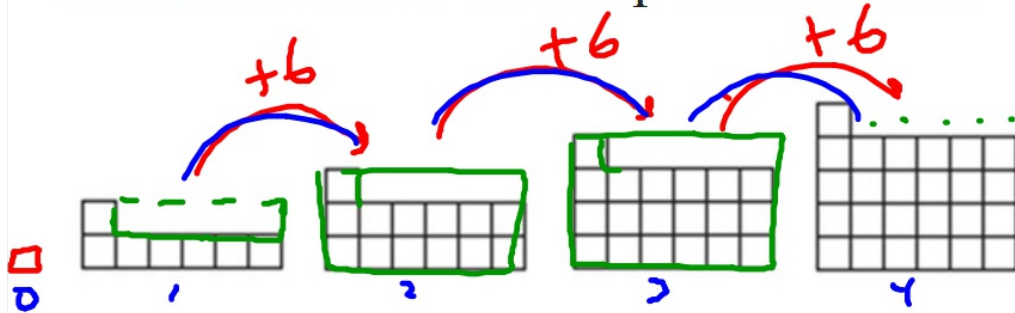


Good afternoon: warm up in notebooks



$$y = \boxed{m}x + b$$

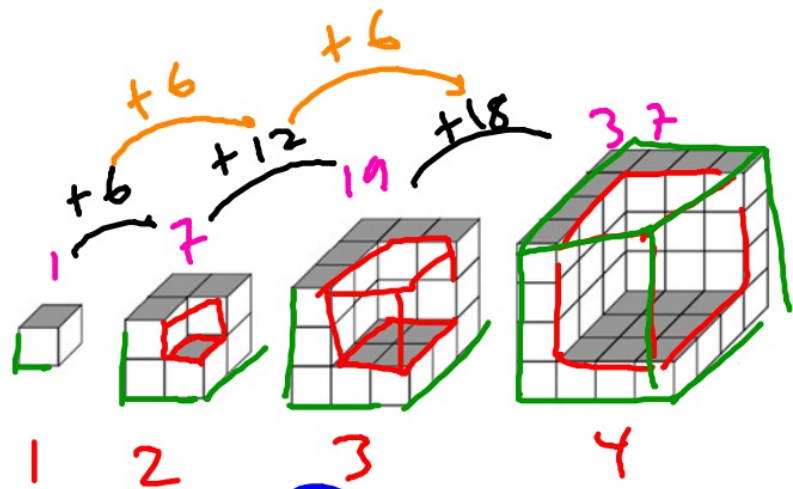
How many blocks in the 43rd iteration?  
How many blocks in the  $n$ th iteration?

259

$$\begin{array}{l} 6x + 1 \\ \textcircled{6n + 1} \end{array} \quad \begin{array}{l} \frac{6(n+1) - 5}{6n + 6 - 5} \\ 6n + 1 \end{array}$$

Reminders:

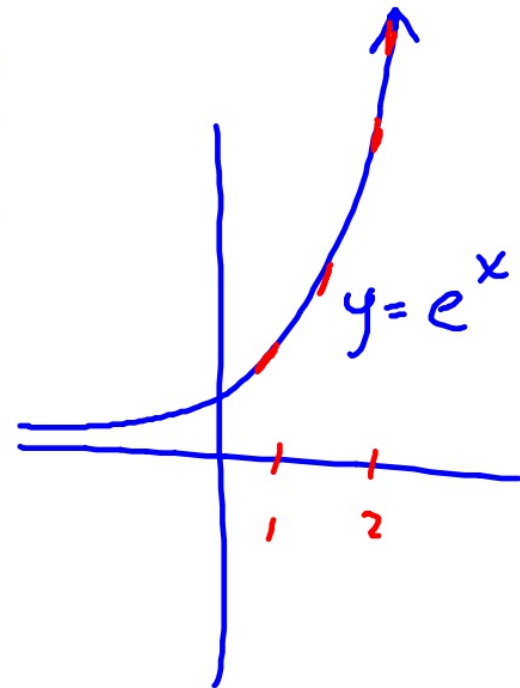
- reassessments available in DS



Volume in 43rd iteration?

Volume in  $n$ th iteration? =  $n^3 - (n-1)^3$

$$43^3 - 42^3 = 5419$$



Now do these: #6 and #8

$$6) \begin{cases} (3x - 4y = -20) \cdot 4 \\ (-4x - 5y = 6) \cdot 3 \end{cases} \quad (-4, 2)$$

$$\begin{cases} 12x - 16y = -80 \\ -12x - 15y = 18 \end{cases}$$

$$0x - 31y = -62$$

$$\begin{array}{r} -31y = -62 \\ \hline -31 \quad -31 \\ \hline \end{array}$$

$$\underline{y = 2}$$

$$-4x - 5(2) = 6$$

$$\begin{array}{r} -4x - 10 = 6 \\ \hline +10 \quad +10 \\ \hline \end{array}$$

$$\begin{array}{r} -4x = 16 \\ \hline -4 \quad -4 \\ \hline \end{array}$$

$$\underline{x = -4}$$

$$8) 7x^2 + 22x - 24 = 0$$

*Factors:  $\pm 1, 24$ ;  $\pm 2, 12$ ;  $\pm 3, 8$ ;  $\pm 4, 6$*

$$(7x - 6)(x + 4) = 0$$

$$7x - 6 = 0$$

$$7x = 6$$

$$\underline{x = 6/7}$$


$$x + 4 = 0$$

$$\underline{x = -4}$$

## Algebra Skills checklist

- ✓ solving a system of linear equations
- ✓ factoring a quadratic equation to find solutions

 absolute value equations

 inequalities

 function behavior from a calculator

me : hey

student athlete :      

me : how did you say that out loud

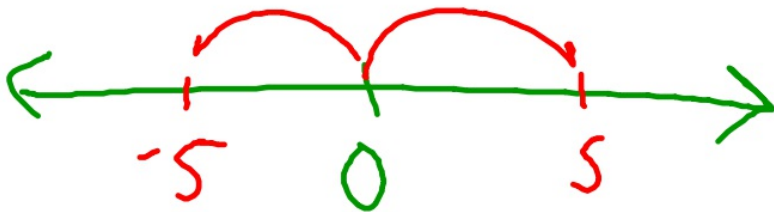
## Absolute Value

## NOTES

What does this mean?

$$|x| = 5$$

"What number(s) are 5 spaces from zero on the number line?"



$$|9x-6| - 2 = 49$$

$$|9x-6| = 51$$



$$9x-6 = 51$$

$$9x = 57$$

$$x = 57/9 = 19/3$$

$$9x-6 = -51$$

$$9x = -45$$

$$x = -5$$

- ① Isolate the absolute value term.
- ② Set the interior equal to  $\pm$  the constant term



$$\frac{|10-4x|}{2} \cdot \frac{\cancel{-2}}{\sqrt{2}} = 21 \cdot \frac{\cancel{-2}}{2}$$

$$2 \left( \frac{|10-4x|}{2} = 21 \right) \cdot 2$$

$$|10-4x| = 42$$

$$\begin{array}{r} 10-4x = 42 \\ \underline{-10} \quad \underline{-10} \end{array}$$

$$\begin{array}{r} -4x = 32 \\ \underline{-4} \quad \underline{-4} \end{array}$$

$$x = -8$$

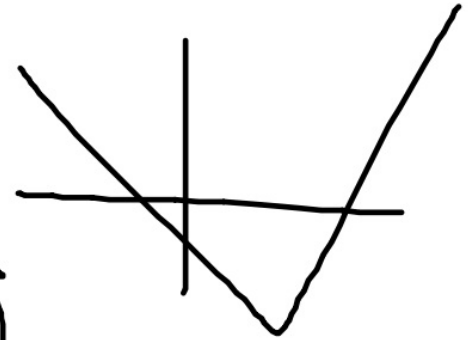
$$\begin{array}{r} 10-4x = -42 \\ \underline{-10} \quad \underline{-10} \end{array}$$

$$\begin{array}{r} -4x = -52 \\ \underline{-4} \quad \underline{-4} \end{array} = 13$$

① Isolate the absolute value

② Set interior equal to  $\pm$  [constant term]

$$\{-8, 13\}$$



## Inequalities

Find all numbers that satisfy

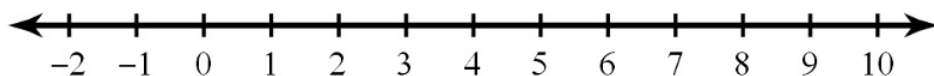
$$15 \leq 5x + 10 < 45$$

-10                  -10      -10

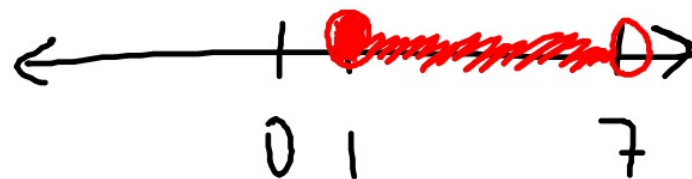
$$5 \leq \frac{5x}{5} < \frac{35}{5}$$

$$1 \leq x < 7 \rightarrow [1, 7)$$

Graph the solution set



$$24 \geq 5n + 9 \geq -1$$





$$24 > 5n + 9 \geq -1$$

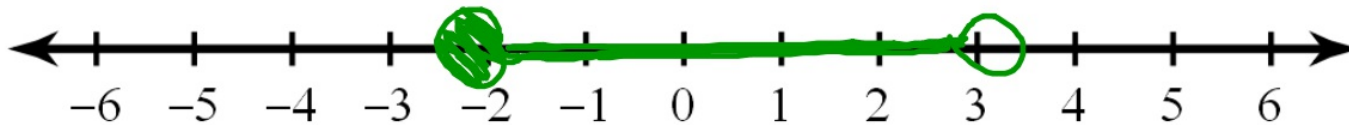
$$-1 \leq 5n + 9 < 24$$

$$\begin{array}{ccc} -9 & -9 & -9 \end{array}$$

$$-\frac{10}{5} \leq \cancel{5}n < \frac{15}{5}$$

$$-2 \leq n < 3$$

$$3 > n \geq -2$$



$$63 \leq -9 - 9x < 81$$

*+9*     *+9*     *+9*

$$\frac{72}{-9} \leq \frac{-9x}{-9} < \frac{90}{-9}$$

$$-8 \geq x > -10$$

Flip sign



## Function Behavior

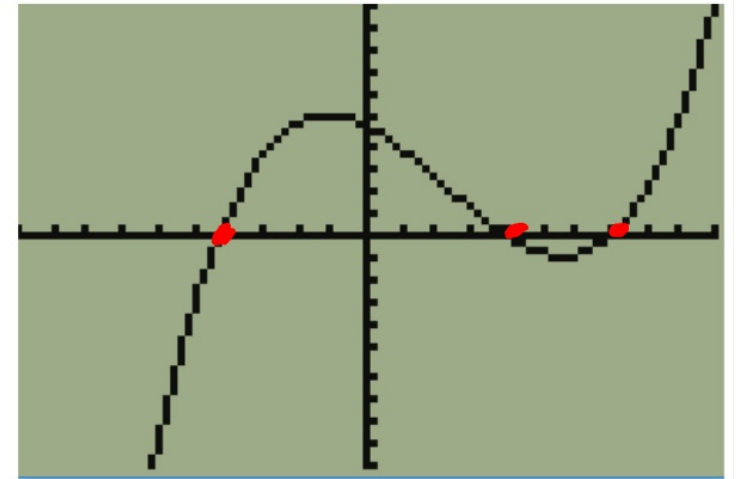
What is a function?

$$y = 0.04x^3 - 0.27x^2 - 0.75x + 4.76$$

Let's graph this thing

$$y = 0.04x^3 - 0.27x^2 - 0.75x + 4.76$$

Let's graph this thing



Roots/zeroes:

***you need to know how to do these steps in the calculator  
write down the buttons!***

Practice problems:

Handout from last class:  
#2, #10, #13-16

Mini-handout from today:  
#1-6

Answers to be posted at [mgeo.weebly.com](http://mgeo.weebly.com)