Good morning: attach warm up to notebooks, then solve using private think time (we will trade papers after several minutes to Interpret and Compare)

Your art class is selling tickets for an event. Students pay a certain price and everyone else pays a different price. At lunch, $104 dollars were made selling 18 student tickets and 4 general admission tickets. After school, you sold 12 student tickets and 8 GA tickets making $96. How much is each ticket?

$$\begin{cases} 18s + 4g = 104 \\ 12s + 8g = 96 \end{cases} \xrightarrow{(\,\cdot\,)-2} + \begin{cases} -36s - 8g = -208 \\ 12s + 8g = 96 \end{cases}$$

$-24s = -112$

$s = \$4.67$

$\frac{112}{24} = \frac{4.6\overline{6}}{4.67}$

$18(4.67) + 4g = 104$

$84.06 + 4g = 104$

$4g = 19.94$

$g = \$4.99$

Reminders:

last assessment on Monday

retakes available in DS (ask for pass)

1st iteration

2nd iteration

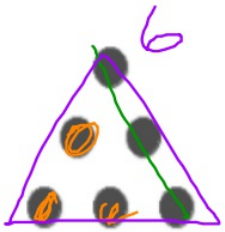
3rd iteration

What are some questions you could ask about this picture?

n = 0

0th iteration

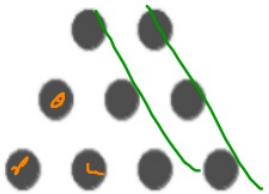
3



n = 1

1st iteration

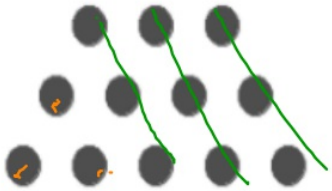
6



n = 2

2nd iteration

9



n = 3

3rd iteration

12

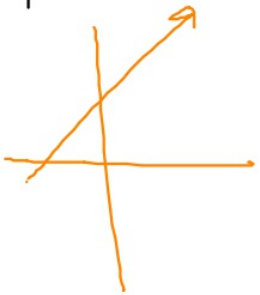
$3 + 3n$

$6 + 3(n-1)$

$6 + 3n - 3$

$3n + 3$

$y = mx + b$



How many dots are in the 43rd iteration? 132

How may dots are in the *n*th iteration?

Checkpoint: are you able to solve these?

Comp. Sq.

$x^2+6x=17$

$x^2+6x = 17$

$\left(\frac{6}{2}\right)^2 \rightarrow (3)^2 = 9$

$x^2+6x+9 = 17+9$

$(x+3)(x+3) = 26$

$\sqrt{(x+3)^2} = \sqrt{26}$

$x+3 = \pm\sqrt{26}$

$x = -3 \pm \sqrt{26}$

Factoring

$x^2+6x=16$

$x^2+6x-16 = 0$

$(x-2)(x+8) = 0$

$x-2=0$ $\quad$ $x+8=0$

$x=2$ $\quad$ $x=-8$

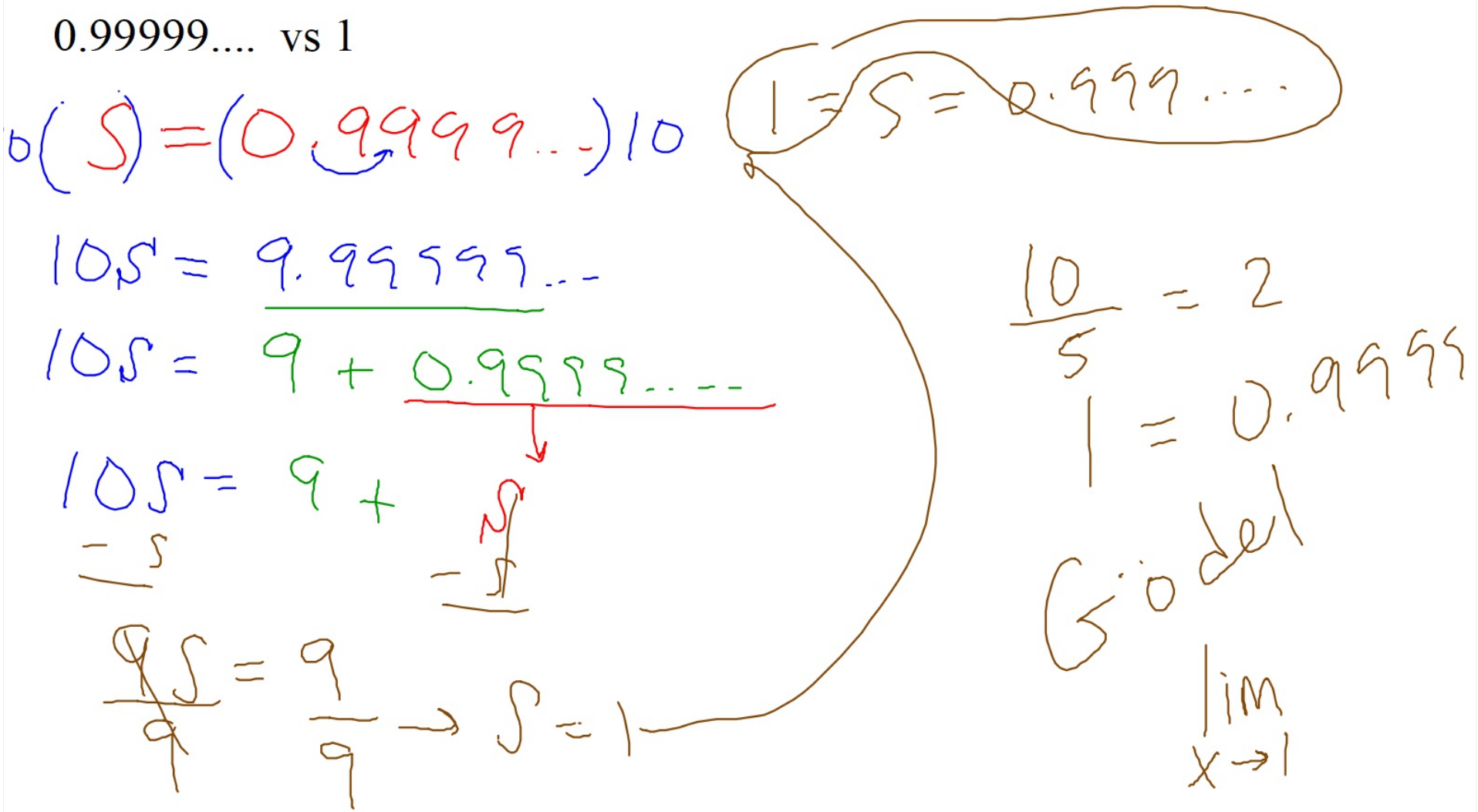
16: 1, 16
2, 8
4, 4

(From Monday)

- reviewing/previewing algebra topics
    - solving quadratics ✅
    - completing the square ✅
    - finding roots with a calculator
    - solving/graphing compound inequalities
    - solving absolute value equations
    - solving linear system of equations ✅

Let's take a detour into some funky math

0.99999.... vs 1


10(S)=(0.9999...)10
10S = 9.99999...
10S = 9 + 0.9999...
10S = 9 + S
- S
- S
9S = 9
9 9
S = 1
1 = S = 0.999....
10/5 = 2
1 = 0.9999
Godel
lim
x→1

Absolute Value

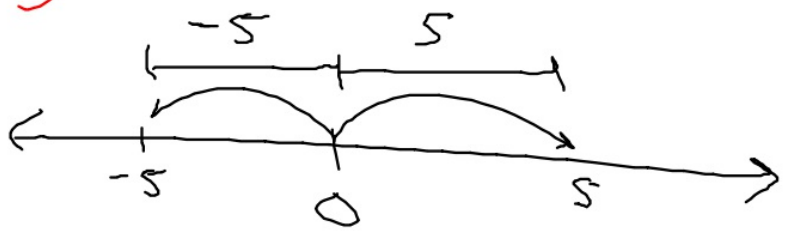
NOTES

What does this mean?

$$|x| = 5$$

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

$x = 5$ or $x = -5$



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

$+2 \quad +2$

$|9x-6| = 51$

$9x-6=51$ $\quad$ $9x-6=-51$

$+6 \quad +6$ $\quad$ $9x=-45$

$9x=57$ $\quad$ $x=-5$

$x=57/9$

① Isolate the absolute value term

② Set the interior equal to ± Constant term

$$|10-4x| - 2 = 21$$

$+2 \qquad +2$

$$|10-4x| = 23$$

$10-4x=23$ $\qquad$ $10-4x=-23$

$-4x=13$ $\qquad$ $-4x=-33$

$x = 13/-4$ $\qquad$ $x = 33/4$

(need more practice?
see back of last night's
handout)

Inequalities

Find all numbers that satisfy

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

$-10 \quad -10 \quad -10$

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

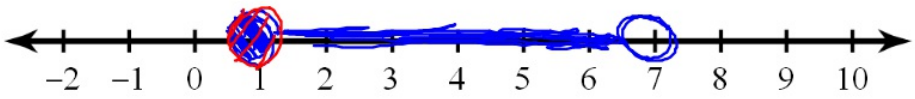
$$1 \leq x < 7$$

Solution set

aka: $[1, 7)$

interval notation

Graph the solution set



Ex $-2 \leq 3x^2 - 4x + 8 < 2x$

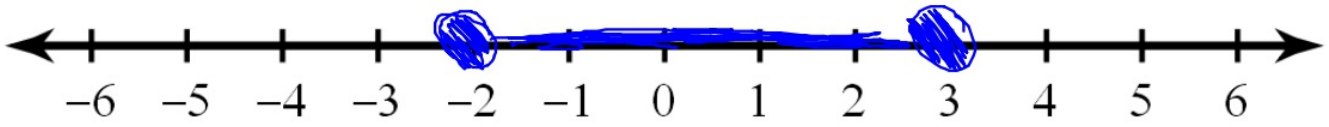
$$24 \geq 5n + 9 \geq -1$$

$-9 \quad -9 \quad -9$

$15 \geq 5n \geq -10$

$3 \geq n \geq -2 \longrightarrow \boxed{-2 \leq n \leq 3}$

$[-2, 3]$



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

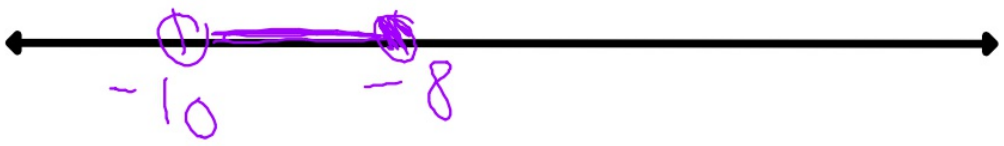
+9 +9 +9

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

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

flip sign when div/mult. by negative

USE CAUTION



Homework
complete the practice assessment, check solutions online,
watch review videos if needed #1-5

last assessment is Monday!