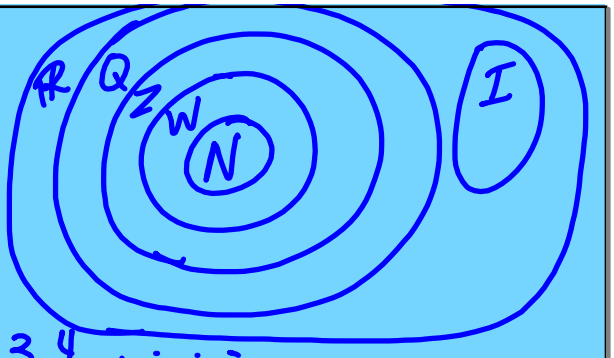
August 28, 2024

REVIEW

Sets of Numbers



N = Natural Numbers – 1, 2, 3, 4. . . . .

W = Whole Numbers – 0, 1, 2, 3. . . .

Z = Integers = . . . -2, -1, 0, 1, 2. . . .

Q = Rational = $\frac{m}{n}$ $\frac{2}{3}, \frac{21}{5}, -4$

terminating or repeating decimals

0.3 7.25 $8.9\overline{67}$

I = Irrational non-terminating, non-repeating decimals

$\pi, \sqrt{2}, \sqrt{11}, e$

R = Real = all rational & irrational #'s

+6 $-\frac{23}{7}$ Q, R

$\frac{2x+3}{x+4} + \frac{4}{x-7}$

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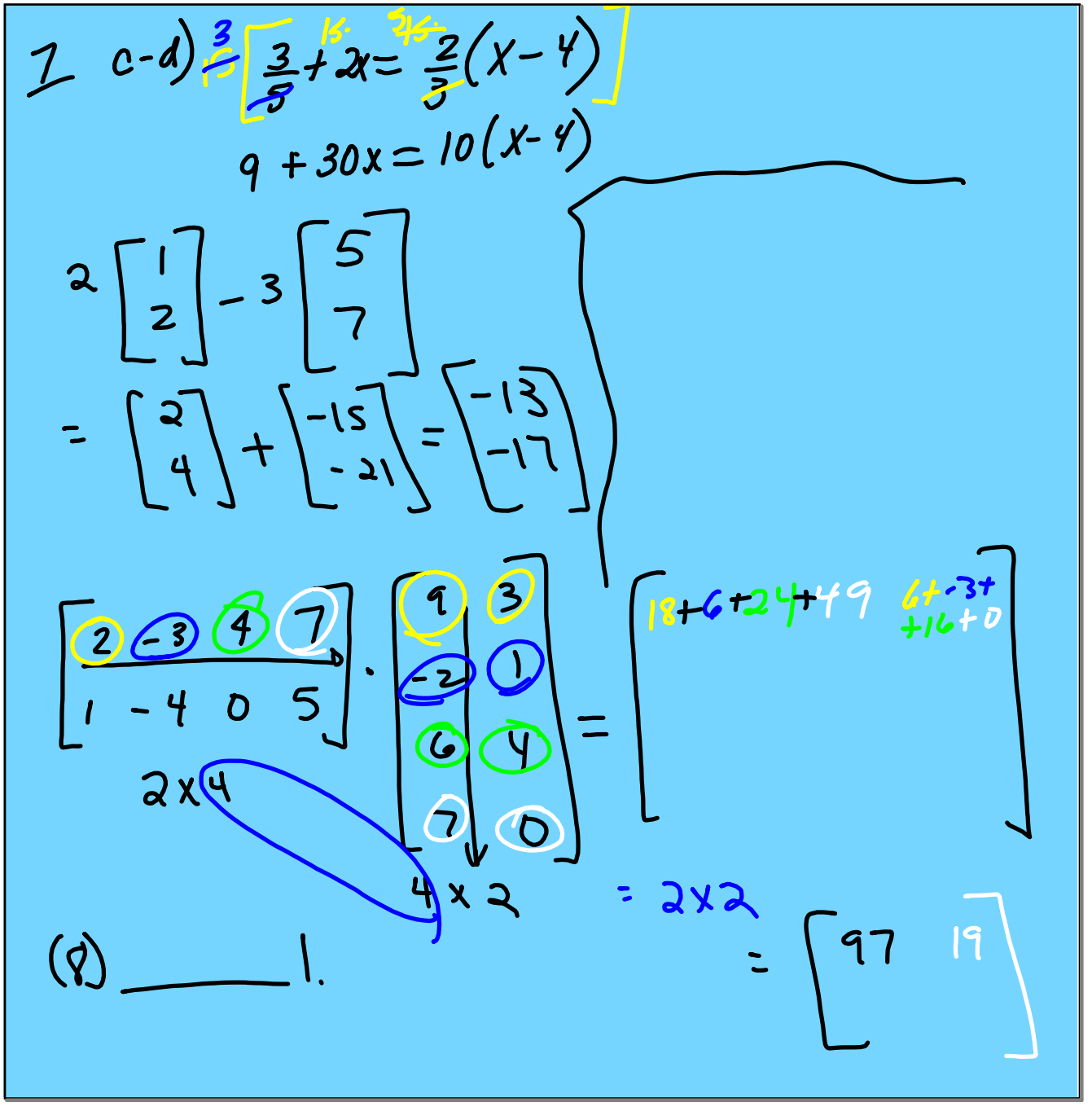


Testing Points

Variables multiplied or divided

$\leq 0 \quad \geq 0$

$$\frac{x(x+7)}{(2x-8)} \leq 0$$

$x = 0$

$2x - 8 = 0$

$2x = 8$

$x = 4$

$+ \cdot + = -$

$x \leq -7$ OR $0 \leq x < 4$

$$24 - 2y \leq y + 4 \leq 3y - 7$$

$24 - 2y \leq y + 4$ AND $y + 4 \leq 3y - 7$

Solve + graph ↖ must intersect

Abs Value

1) Isolate abs value
2) Write & solve 2 eq.
3) Graph

$|y+7| \leq -4$

No sol.

$|y+7| > -8$

$\mathbb{R}$

$7 - 3|4-2x| > -14$

$-7 \quad\quad -7$

$\frac{-3|4-2x|}{-3} > \frac{-21}{-3}$

$|4-2x| < 7$

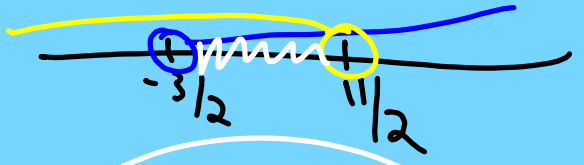
Less THAND
Great OR

$4-2x < 7$ AND $4-2x > -7$

$-4 \quad -4 \quad\quad -7$

$\frac{-2x}{-2} < \frac{3}{-2} \quad\quad \frac{11}{2} > \frac{2x}{2}$

$x > -3/2$ AND $\frac{11}{2} > x$



$-\frac{3}{2} < x < \frac{11}{2}$