

Do Now:

1. Find the solution set and state it:
 - a) Graphically
 - b) In set builder notation
 - c) In interval notation

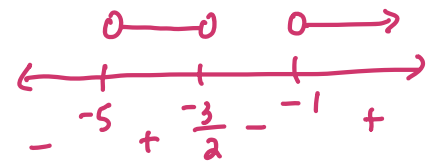
$$\frac{4}{x+5} > \frac{1}{2x+3}$$

$$\frac{4}{x+5} - \frac{1}{2x+3} > 0$$

$$\frac{8x+12-x-5}{(x+5)(2x+3)} > 0$$

$$\frac{7x+7}{(x+5)(2x+3)} > 0$$

$$\frac{7(x+1)}{(x+5)(2x+3)} > 0$$



b) $\{x \mid -5 < x < -\frac{3}{2} \vee x > -1\}$

c) $(-5, -\frac{3}{2}) \cup (-1, \infty)$

Classwork

For each example, find the solution set and state it

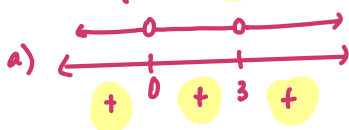
- a) Graphically
- b) In set builder notation
- c) In interval notation

1. $x^2(x^2 + 9) > 6x^3$

$$x^4 - 6x^3 + 9x^2 > 0$$

$$x^2(x^2 - 6x + 9) > 0$$

$$x^2(x-3)^2 > 0$$



b) $\{x \mid x < 0 \vee 0 < x < 3 \vee x > 3\}$
 OR $\{x \mid x \in \mathbb{R}, x \neq 0, 3\}$ OR $\{x \mid x \in \mathbb{R} / \{0, 3\}\}$

c) $(-\infty, 0) \cup (0, 3) \cup (3, \infty)$

is an element of
 \mathbb{R} : real #s

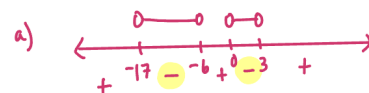
6. $\frac{9x-45}{x^2+6x} < \frac{1}{x} - 1$

$$\frac{9x-45}{x^2+6x} - \frac{1}{x} + 1 < 0$$

$$\frac{9x-45-x-6+x^2+6x}{x(x+6)} < 0$$

$$\frac{x^2+14x-51}{x(x+6)} < 0$$

$$\frac{(x+17)(x-3)}{x(x+6)} < 0$$



b) $\{x \mid -17 < x < -6 \vee 0 < x < 3\}$

c) $(-17, -6) \cup (0, 3)$