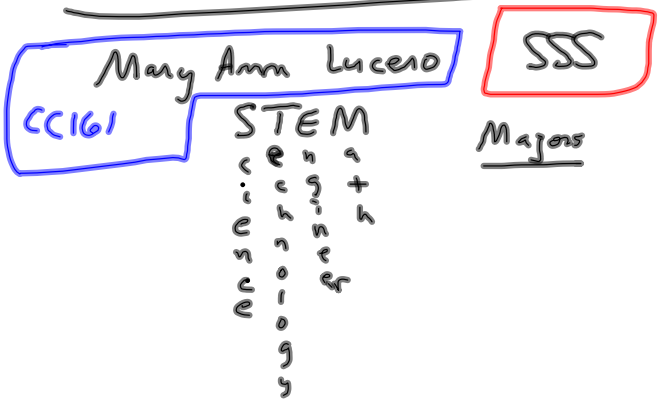


SI session 3-4pm today,
BH 140



$$|A| = B$$
$$A = B \text{ OR } A = -B$$

1st step for when
 $|A|$ is isolated.

$$|A| < B$$
$$A < B \text{ AND } A > -B$$

$$|A| > B$$
$$A > B \text{ OR } A < -B$$

$$3|x+2|-5 = -2$$

$$3|x+2| = 3$$

$$3|A| = |3A|$$

$$|3(x+2)| = 3$$

$$3(x+2) = 3 \quad \text{OR} \quad 3(x+2) = -3$$

$$3x+6 = 3$$

$$3x+6 = -3$$

$$3x = -9$$

$$3x = -3$$

$$x = -\frac{9}{3} = -3$$

$$x = -\frac{3}{3} = -1$$

$$x \in \{-3, -1\}$$

$$3|x+2| = 3$$

$$|x+2| = \frac{3}{3} = 1$$

$$x+2 = 1 \quad \text{OR} \quad x+2 = -1, \text{ etc.}$$

$$3|x+2| = 11$$

$$|x+2| = \frac{11}{3}$$

$$x+2 = \frac{11}{3} \quad \text{OR} \quad x+2 = -\frac{11}{3}$$

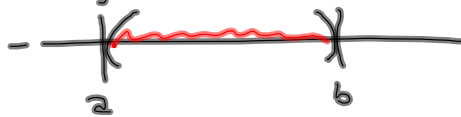
etc.

So the 1st
way spared
us the fractions,
at least
temporarily.

$$|3x-5| < 25$$

$$3x-5 < 25 \quad \text{AND} \quad 3x-5 > -25$$

How many intervals expected? 1



$$|3x-5| > 25$$

$$3x-5 > 25 \quad \text{OR} \quad 3x-5 < -25$$

Expect 2 intervals



Solve the following inequalities

a. $3 - 5x < 6$

e. $|3x - 2| > -7$

b. $\frac{x}{5} - 7 > \frac{2}{3}$

f. $|3x - 2| - 10 \geq -7$

c. $|3x - 2| < 7$

d. $|3x - 2| \leq -7$

Should be a gimme page on test.

Elizabeth scored 61, 77, and 81 on three equally weighted tests in French. If the final exam score counts for two-thirds of the grade and the tests count for one-third, then what range of scores on the final exam would give her a final average over 70? Hint: For this weighted average multiply the final exam score by $\frac{2}{3}$ and the average of the test scores by $\frac{1}{3}$.

Final weighs $\frac{2}{3}$ of grade.

Tests count for $\frac{1}{3}$.

wants Final grade average over 70.

$$\text{Tests: } \frac{61 + 77 + 81}{3} = \frac{219}{3} = 73$$

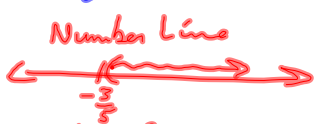
$$\frac{1}{3} \cdot 73 + \frac{2}{3}x > 70$$

$x = \text{Final Test Score}$

a. $3 - 5x < 6$
 $-3 = -3$
 $\frac{-5x < 3}{-5} \quad \text{is a lie.}$

$3 - 5x < 6$
 $-3 = -3$
 $\frac{-5x < 3}{-5}$

a. $3 - 5x < 6$
 $-3 = -3$
 $-5x < 3$
 $\frac{-5x}{-5} > \frac{3}{-5} \quad \text{is legit.}$



$x > \frac{3}{-5}$
 set-builder $\{x \mid x > \frac{3}{-5}\}$ = Interval $(-\frac{3}{5}, \infty) \neq x > -\frac{3}{5}$

I will ask for
 Set-builder &
 interval notation answers

Distinguish between
 membership qualification
 & the club, itself.

Next time: Questions
 Solving Quadratics in 3 ways.
 See Practice Tests.

$\cos(x) = \frac{e^{ix} + e^{-ix}}{2}$

Imaginary units crop up in higher math
 and electrical engineering.

