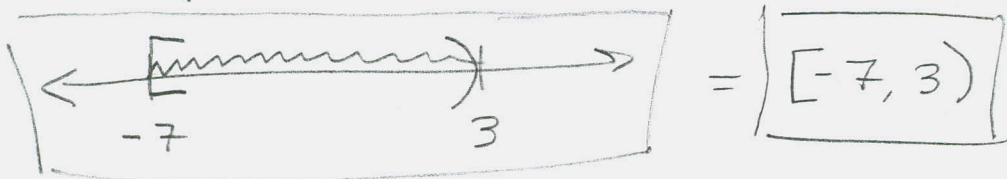


MAT 099 #s 2, 4, 10, 24, 52, 59, 69

#s 1-10 Graph sol'n set of each inequality and write it in interval notation

$$\textcircled{10} \{x \mid -3 > x \geq -7\}$$

$= \{x \mid -7 \leq x < 3\}$ is "left to right"



#s 23-68 write sol'n set using interval notation

$$\textcircled{24} 8 - 5x < 23$$

$$-5x < 15$$

$$x > \frac{15}{-5} = -3$$

$$\{x \mid x > -3\} = \leftarrow \left(\begin{array}{c} \text{wavy line} \\ -3 \end{array} \right) \rightarrow = \boxed{(-3, \infty)}$$

$$\textcircled{52} 13y - (9y + 2) \leq 5(y - 6) + 10$$

$$13y - 9y - 2 \leq 5y - 30 + 10$$

$$4y - 2 \leq 5y - 20$$

$$4y \leq 5y - 18$$

$$-y \leq -18$$

$$y \geq 18$$

$$\{y \mid y \geq 18\} = \leftarrow \left[\begin{array}{c} \text{wavy line} \\ 18 \end{array} \right] \rightarrow = \boxed{[18, \infty)}$$

MAT 099 S 2.4 #5 59, 69

$$\textcircled{59} \quad \frac{x+3}{12} + \frac{x-5}{15} < \frac{2}{3} \quad \begin{array}{l} 2 \sqrt{12} \\ 2 \sqrt{6} \\ 3 \end{array} \quad \begin{array}{l} 3 \sqrt{15} \\ 5 \end{array}$$

$$12 = 2 \cdot 2 \cdot 3, \quad 15 = 3 \cdot 5 \implies \text{LCD} = 2 \cdot 2 \cdot 3 \cdot 5 = 60$$

$$60 \left(\frac{x+3}{12} \right) + 60 \left(\frac{x-5}{15} \right) < 60 \left(\frac{2}{3} \right)$$

$$5(x+3) + 4(x-5) < 20(2)$$

$$5x + 15 + 4x - 20 < 40$$

$$9x - 5 < 40$$

$$9x < 45$$

$$x < \frac{45}{9} = 5$$

$$\{x \mid x < 5\} = \boxed{(-\infty, 5)}$$

#569-76 Solve. Answer with ~~an~~ an inequality
b. in words.

$\textcircled{69}$ Shreka has scores of 72, 67, 82, 79

a. we find the scores she must have on the final exam to pass with 77 or higher, given that the final counts as 2 tests.

Let x = final test score. It weighs like 2 tests. This amounts to a total of $4+2=6$ tests, and the last two will be the same.

$$\text{Average} = \frac{72 + 67 + 82 + 79 + 2x}{6} \geq 77$$

$$\frac{300 + 2x}{6} \geq 77$$

MAT 099 § 2.4 #69

69 cont'd

$$\frac{300 + 2x}{6} \geq 77$$

$$300 + 2x \geq 6(77) = 462$$

$$2x \geq 162$$

$$x \geq 81$$

b. Shureka needs a final test score of at least 81 in order to finish with at least a 77% for the semester.

How about for our course?

Essays 5%, Home 15%, Tests 60%, Final 20%

E

H

T

F

$$\text{FINAL GRADE} = .05E + .15H + .6T + .2F$$

This is a weighted average, similar to #69, which would look like this:

6 parts, 4 are Tests, 2 are Final

$$\frac{4}{6}T + \frac{2}{6}F = \text{Final Grade} = \frac{2}{3}T + \frac{1}{3}F$$

This would

$$\text{be } \frac{72 + 67 + 82 + 79}{4} = T$$