Quiz 8

Key

This is a two-stage quiz. During the first stage, you can use your knowledge & calculator. You have 15 min. In the second stage, you are now welcome to use your books, notes, and students in the class to retake the same quiz. You have 15 min. to write one solution (with everyone's name on it!!!) to be turned in for the group. Groups must be 2 or 3 people.

Show your work as you would for a colleague. Partial credit requires reasonable support.

1. [3] The following work maybe correct or incorrect. If correct, briefly describe why. If incorrect, find the error(s) and try to detect the reason for the error:

Algebra Activity #5

sense (+.5) start (+.5)

$$\frac{2}{x}+\frac{2}{5}=\frac{3}{4}; \text{ flip both sides over} \rightarrow$$

(+1) ERROR - doing different things to each side, we'd need one fraction on each side to legally flip both sides/ do the same thing to both sides

says something is wrong that is OK (-1)

Correct communication

$$\frac{x}{2}+\frac{5}{2}=\frac{4}{3}; \text{ add the fractions on the right}$$

$$\frac{x+5}{2}=\frac{4}{3}; \text{ multiply both sides by 2}$$

Performing same operation on each side

$$x+5=\frac{8}{3}; \text{ subtract 5 from both sides}$$

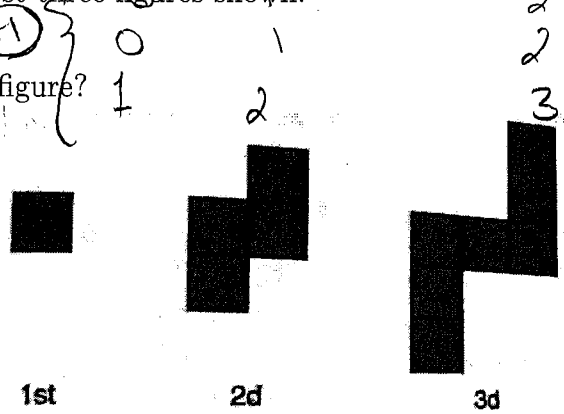
$$x=\frac{8}{3}-5=\frac{8}{3}-\frac{15}{3}=\frac{-7}{3}$$

common den for subtraction

Extra §9.1 #1

2. Consider the sequence that begins with the first three figures shown:

pattern (+1)



2 : down
2 : up
3 : across

Communication notation (+.5)

(a) [2] How many tiles are there in the 10th figure?

horizontally: 10 across
up: 9
down: 9

got it (+.5)

total tiles = 10+9+9 = 28

§9.1 #3 b/c

(b) [3] Let n be the figure number. Describe the number of tiles in the nth figure in terms of n.

start (+.5)
notation (+.5)
breakdown/pattern (+1)
got it (+1)

n^{th} figure tile #'s = "horz tile #" + "up tile #" + "down tile #"

$= n + (n-1) + (n-1)$

$= 3n - 2$

Extra §9.1 #1

(c) [2] Which figure will have 8320 tiles?

ie find n so that $8320 = 3n - 2$ (+1)

+2 +2

$\frac{8322}{3} = \frac{3n}{3}$ (+1)

$2774 = n$