Quiz 8

Key

This is a two-stage quiz. During the first stage, use your knowledge & calculator to take this quiz. 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.

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

one equiv (1.5) [3] Write equivalent equations to solve for the variable x given: $\frac{1}{x} + 5 = \frac{3}{x}$

all equiv (1.5) Note: LOTS of ways to do this?

Common den (1.5)

Clear of op / like terms (1)

notation (1.5)

$\frac{1}{x} + 5 = \frac{3}{x}$

$-\frac{1}{x} \quad -\frac{1}{x}$

$5 = \frac{2}{x}$

$5x = 2$

$x = \frac{2}{5}$

OR

$\frac{1}{x} + \frac{5}{1} = \frac{3}{x}$

$\frac{1}{x} + \frac{5x}{x} = \frac{3}{x}$

$\frac{1+5x}{x} = \frac{3}{x}$

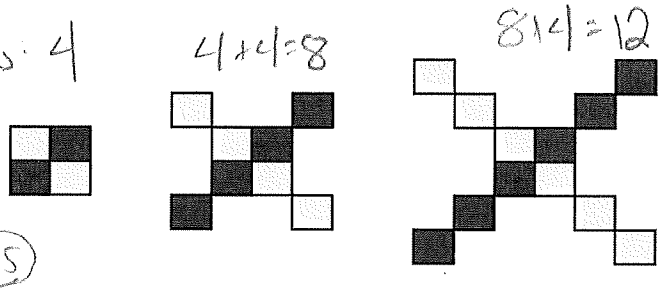
$1 + 5x = 3$

$-1 \quad -1$

$5x = 2$

$x = \frac{2}{5}$

2. Consider the three figures shown:



(a) [2] How many total tiles are there in the fifth figure?

#tiles: 4 ; 4+4=8 ; 8+4=12

$4 \cdot 5 = 20$ (+.5)

pattern (+1)

count #'s for 1st, 2nd, 3rd (+.5)

(b) [2] Write an algebraic expression for the nth figure for the total number of tiles.

1st: $4 \cdot 1$; 2nd: $4 \cdot 2$; 3rd: $4 \cdot 3$

start (+.5) notation (+.5) goal (+1)

$4n$ notice increase by 4 from one figure to the next

(c) [3] Which figure will have 2172 total tiles? Provide either some steps or justification for your answer.

start (+.5) notation (+.5)

find n so that $2172 = 4n$ (+.5) (+.5)

$\Rightarrow$

$n = \frac{2172}{4}$ or 543rd figure

algebra/solve (+1)