Quiz 2A, MTH 2010 - No Calculators

Dr. Graham-Squire, Spring 2015

Name: Key

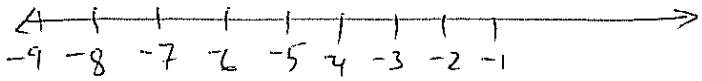
8:29
8:33
4 min

Give 15-20 min

1. (2 points) Calculate $-3-(-8)$. Explain why your answer makes sense by using a number line or "real-world" reasoning–it is not enough to just give a straight mathematical calculation.

$-3-(-8) = -3+8 = 5$

(B) $-5-(-9)$



$-3-(-8)$ is the distance between the numbers, which is 5.

2. (2 points) Ben woke up at 6:54 AM,and played video games until 9:03 AM. To calculate how long he played, he did the following calculation:

$$\begin{array}{rcl} & & 9 \\ & 8 & \not{10}\ 13 \\ & \not{9} : & \not{0}\ \not{3} \\ - & 6 : & 5\ \ 4 \\ \hline & 2 : & 4\ \ 9 \end{array}$$

(B) 9:05
5:57

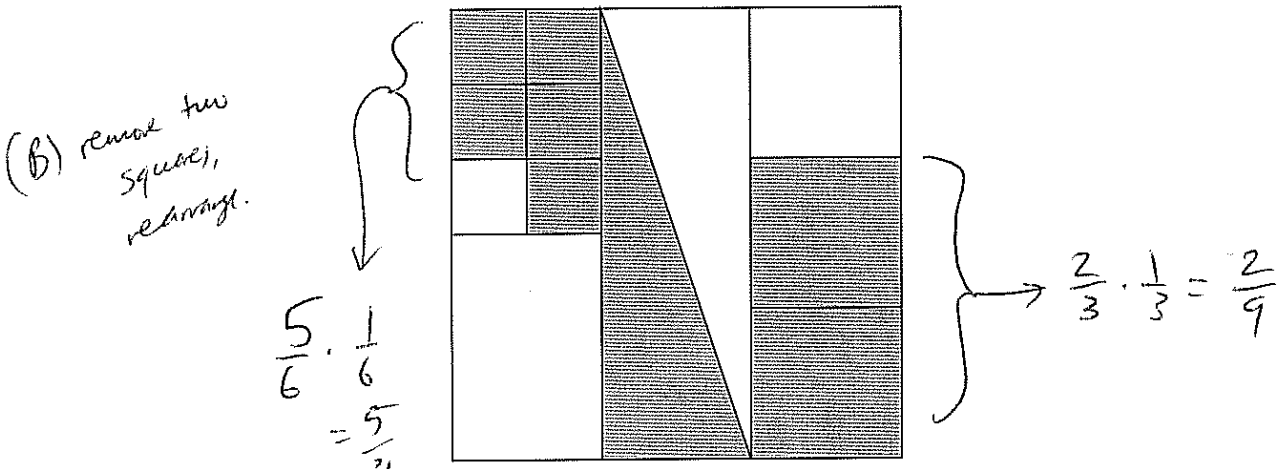
Is his answer correct? If not, what was his mistake?

It is not correct. When he carried one hour from the 9 he should have put a 6 above the zero, not a ten (since there are 60 minutes in an hour. This gives

$$\begin{array}{r} 5 \\ 8\ \not{6}13 \\ \not{9}:\not{0}3 \\ 6:54 \\ \hline 2:09 \end{array}$$

2 hours, 9 min.

3. (4 points) What fraction of the square is shaded? Show your work to get full/partial credit!



(A) $\frac{3}{7}$

(B) $\frac{17}{36}$

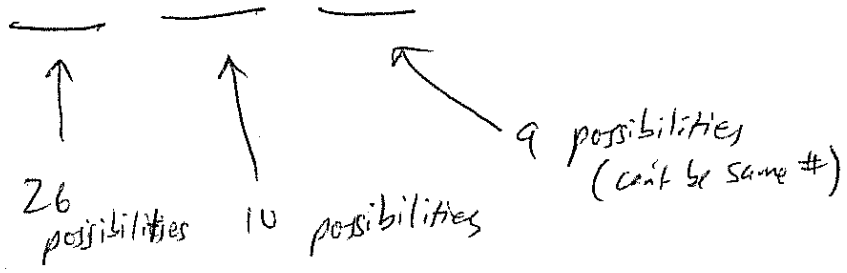
(C) $\frac{19}{36}$

(D) $\frac{11}{9}$

(E) $\frac{2}{3}$

$\frac{5}{36} + \frac{1}{6} + \frac{2}{9} = \frac{5}{36} + \frac{6}{36} + \frac{8}{36} = \boxed{\frac{19}{36}}$

4. (2 points) Eva wants to create a secret password so that only people she trusts will be allowed into her awesome pony-princess-mermaid-fairy club. She wants the code to have three total entries: it must start with a letter of the alphabet, and then be followed by two numbers (zero through 9), which can't be the same number. How many different secret passwords are possible? Explain your reasoning.



$$\begin{array}{r} 26 \\ \times\ 9 \\ \hline 54 \\ 180 \\ \hline 234 \end{array}$$

$26 \times 10 \times 9 = \boxed{2340}$