Minitest 4A - MTH 2010

Dr. Graham-Squire, Spring 2015

Name: _____

I pledge that I have neither given nor received any unauthorized assistance on this exam.

_____

(*signature*)

DIRECTIONS

1. Show all of your work, **even on the multiple choice questions**. A correct answer with insufficient work or incorrect notation will lose points.
2. Clearly indicate your answer by putting a box around it.
3. Calculators, cell phones and computers are <u>not</u> allowed on this test.
4. Make sure you sign the pledge.
5. Number of questions = 6. Total Points = 25.

1. (3 points)

(a) Find the mistake(s) in the calculation, if any exist. If possible, correct any mistakes.

$$\begin{aligned}\frac{(7-\frac{1}{2}\times 8+1)+2\times 8}{40\% \text{ of } 5} &= \frac{(7-4+1)\times 16}{0.40\times 5}\\ &= \frac{4+16}{2}\\ &= \frac{\cancel{4}^{2}+16}{\cancel{2}_{1}}\\ &= 18\end{aligned}$$

(b) Solve the equation:

$$x+80-\frac{1}{4}(x+80)=180$$

2. (5 points) Agnes is thinking about raising the price of the weasel puppets at her toy store. She is thinking about three different options:

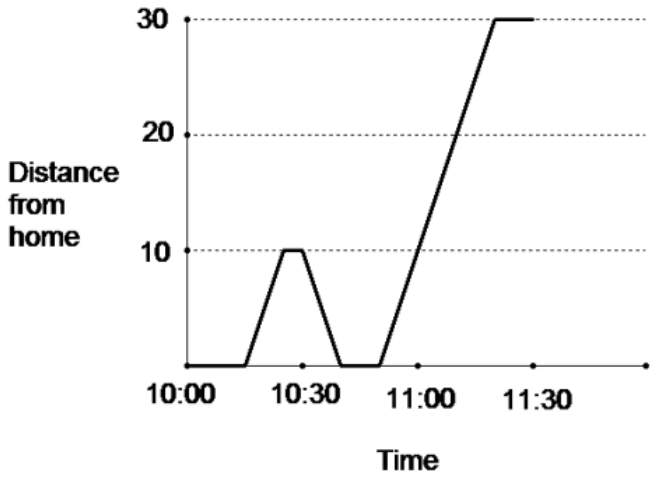
   - Raise the price by 21% this week, then raise the new price by 17% next week.
   - Raise the price by 17% this week, then raise the new price by 21% next week.
   - Raise the price by 38% this week.

   Agnes is wondering which of these options will increase the price the most and which the least, by the end of next week. Explain how the options are different and how they are the same–you should be able to explain to Agnes whether or not some, or all, of the price changes are the same, and whether or not it matters what the original price was. And if some of the prices are not equal, which one will be higher, and why.

   You should use some mathematical calculations or arguments to back up your claims.

3. (5 points) There are three kinds of cupcakes at the bakery: chocolate, vanilla, and red velvet. There are $1\frac{1}{2}$ times as many chocolate cupcakes as there are vanilla, and 36 of the cupcakes are red velvet. Total, there are 101 cupcakes at the bakery. How many are chocolate and how many are vanilla?

4. (4 points) Use the graph below to answer the question that follows:



The graph above best matches which of the following scenarios:

(A) George left home at 10:00 and drove to work on a crooked path. He was stopped in traffic at 10:30 and 10:45. He drove 30 miles total.

(B) George drove to work. On the way to work there is a little hill and a big hill. He slowed down for them. He made it to work at 11:15.

(C) George left home at 10:15. He drove 10 miles, then realized he'd forgotten something at home. He turned back and got what he'd forgotten. Then he drove in a straight line, at many different speeds, until he got to work around 11:15.

(D) George left home at 10:15. He drove 10 miles, then realized he'd forgotten something at home. He turned back and got what he'd forgotten. Then he drove at a constant speed until he got to work around 11:15.

5. (4 points) Use the table below to answer the question that follows.

y \ x	0	1	2	3	4
4	20	28	36	44	52
3	15	23	31	39	47
2	10	18	26	34	42
1	5	13	21	29	37
0	0	8	16	24	32

Each number in the table above represents a value of w that is determined by the values of integers x and y. For example, when $x = 2$ and $y = 1$, $w = 21$. If the pattern continues, what is the value of w when $x = 20$ and $y = 8$?

(A) 164

(B) 200

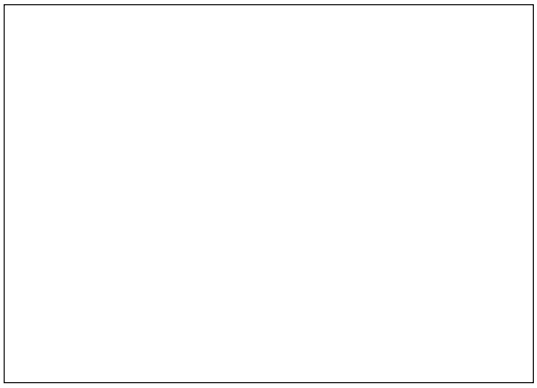
(C) 208

(D) 820

6. (4 points) Shade

$$\frac{1}{7} \times \frac{2}{3} + \frac{4}{5} \times \frac{1}{6}$$

of a rectangle in such a way that you can tell the correct amount is shaded without evaluating the expression.



Extra Credit(1 point) Solve the word problem: "Dominic is given 2 packets of Super Lemur (S.L.) cards on June 1. A week later he gives 20 of his S.L. cards to George. The next week his parents buy 6 packets of S.L. cards, and give Dominic half. The following week he finds two S.L. cards while climbing in a dumpster. On June 1, Iris got 12 packets of S.L. cards. Her grandmother then takes 6 S.L. cards away from her each day for 3 days in a row. A week later, her cat Toonces eats 7 packets of her S.L. cards. At the end of the month of June, Dominic and Iris realize that they have the same number of Super Lemur cards. How many cards are in each packet of S.L. cards?