$\mathsf{C^M_L}$

NAME _____

EUCLIDEAN DIVISION   *MEET 4*   *FEBRUARY 5, 2015*   *GRADE 9*
                                                                 <u>30 MINUTES</u>
                                                          <u>ANSWER COLUMN</u>

<u>Directions:</u> Place your answer to each question below in the answer column.

1) The harmonic mean, m, of x and y is given by $\dfrac{2}{\frac{1}{x}+\frac{1}{y}}$. Find the harmonic mean

of 5 and 10.

1) _____

2) Numbers are said to be relatively prime if 1 is their only common factor. For example, 4 and 9 are relatively prime numbers. Two numbers, both relatively prime to 36 are _____.
a) 34 & 35   b) 25 & 27   c) 35 & 55   d) 45 & 55   e) 35 & 45

2) _____

3) Mr. Felding traveled 4 hours averaging 60 m.p.h. to reach his destination. Had he averaged 40 m.p.h. it would have taken him an additional _____ hours traveling time.

3) _____

4) The average of n numbers is 32. The average of 9 of those numbers is 26. The average of the remaining numbers is _____.
a) $\dfrac{234}{n-9}$ b) $\dfrac{32n-234}{26}$ c) $\dfrac{12n-26}{n-9}$ d) $\dfrac{234-9n}{n+26}$ e) $\dfrac{32n-234}{n-9}$

4) _____

5) The probability that it will rain tomorrow is x. The probability it will not rain tomorrow is y. The value of the expression $7x^2 + 14xy + 7y^2 - 1$ is _____.

5) _____

6) A printer which can print 80 symbols across a page is printing out the alphabet as follows: A B C D _ _ _ X Y Z A B C _ _ _. What is the 46th letter on the 5th line?

6) _____

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The answer to each question is in parentheses at the beginning of each solution.

1) $\left(\frac{20}{3}\right)$ $\dfrac{2}{\frac{1}{5}+\frac{1}{10}} = \dfrac{2}{\frac{3}{10}} = \dfrac{20}{3}$.

2) (c)   The only factor 35 and 36 have in common is 1 and the only factor 55 and 36 have in common is 1.

3) (2)   He traveled 60 m.p.h. × 4 hours = 240 miles. At 40 m.p.h., 240 miles would have taken him 6 hours, an additional 2 hours traveling time.

4) (e)   The sum of the n numbers is $32n$. The sum of the remaining n - 9 numbers is $32n - (9)(26) = 32n - 234$. The average of these n - 9 numbers is $\frac{32n-234}{n-9}$.

5) (6)   P(rain) = x; P(no rain) = 1 - x = y. $x + y = 1$. $7x^2 + 14xy + 7y^2 - 1 = 7(x+y)^2 - 1 = 7 - 1 = 6$.

6) (B)   80 + 80 + 80 + 80 + 46 = 366th letter. Every 26th letter is Z. 366 ÷ 26 = 14r2. The 364th letter is Z (26 × 14 = 364). The 365th letter is A and the 366th is B.