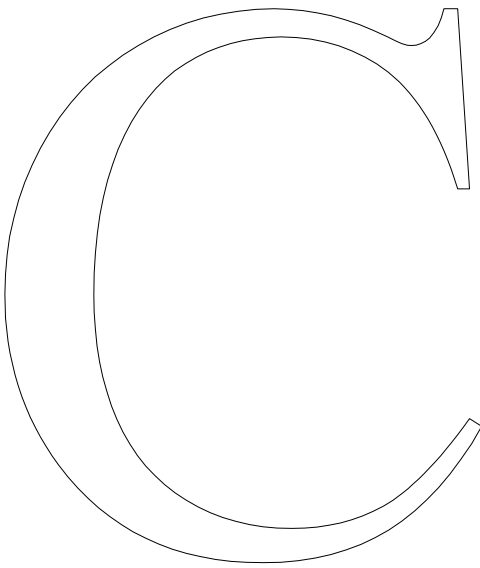


REMT 2006

ANSWERS



MATHEMATICAL

MANIPULATION

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____

LAST NAME

FIRST NAME

GRADE

Be sure to write each of your answers on the answer sheet.

1. The sum of the odd integers from 1 to 99 is 2500. What is the sum of the even integers from 2 to 100?

2. What number is $\frac{3}{5}$ of the way from 321 to 366?

3. Solve the equation $a = \frac{b+2}{b+3}$ for b in terms of a .

4. Simplify as much as possible the expression: $\frac{2x^2 + x - 3}{2x^2 + 7x + 6}$.

5. Simplify as much as possible the expression: $\frac{\sqrt{x}}{x-9} - \frac{1}{\sqrt{x}+3}$.

11. Solve for x in the equation $\log_5 x + \log_5(x + 2) = 2$.

12. There are two values of x for which $2^{x^2} \cdot 2^x = 64$. Find them both.

13. What trigonometric function is equal to $\frac{\sec x}{\sin x} - \cot x$?

14. The rate at which a basketball player can successfully make free throws after x days of practice is given by the formula $F(x) = \frac{0.8}{1 + 1.67e^{-0.16x}}$. How many days of practice will it take, to the nearest whole day, for the player to achieve a free throw success rate of 75%?

15. Two lighthouses are at points A and B , 12 miles apart along a straight shoreline. A ship is at point C , and point D is the point on the shoreline closest to the ship. The navigator determines that angle ACD is 25 degrees, and that angle BCD is 40 degrees. How many miles is the distance CD , to the nearest tenth of a mile?

