

## Grade 4-6

문제유형: Algebra (80%), Geometry (10%), Probability & statistics (10%)

Multiple choice: 10 and Open-end problem:12 (total :22 problems)

1. What is the number rounded to the nearest ten thousands digit for 3,454,987? (Ans: C )  
a) 3,454,990 b) 3,455,000 c) 3,450,000 d)3,460,000 e)3,500,000
2. You have 3 quarters, 4 dimes, 5 nickels, and 6 pennies. I have twice you amount. How much money do I have? (Ans: \$2.92)
3. Thomas earned \$60.00 for a part-time job. He spent  $\frac{1}{4}$  of his earnings and gave  $\frac{1}{3}$  of the remainder to his mother. How much money did he have left? (Ans:\$30)
4. Michael's average score on the first three tests is 87. If he wants to raise his average by 2 points, what score must he earn on the fourth test? (Ans: 95)
5. What is the positive difference between the range and the median of the set {1,3,3,5,5,7,7,8,9,10}? (Ans: A)  
a) 3 b) 4 c) 5 d) 6 e) 7

## Grade 7-9

문제유형: Algebra (60%), Geometry (20%), Probability & statistics (20%)

Multiple choice: 10, Open-end problem I(Answer Only):10, and Open-end problem II(Answer and all your work):3 (total :23 problems)

1. Evaluate  $\frac{3}{10} + \frac{3}{100} + \frac{3}{1000} + \frac{3}{10000} + \dots$ . (Ans:C)  
a) 0.3333 b)0.3334 c)  $\frac{1}{3}$  d)  $\frac{29}{90}$  e)  $\frac{3}{11}$
2. What is the 50<sup>th</sup> term in the following sequence? (Ans:A)  
1, 2, 2, 3, 3, 3, 4, 4, 4, 4, 5, 5, 5, 5, ...  
a) 10 b) 11 c) 12 d) 13 e) 14
3. Tom and I play a coin game. A fair coin is tossed ninety-four times.  
If the result is a head, Tom gives me \$1.00  
If the result is a tail, I give him \$1.00  
After the game is over, I have gained \$2.00. How many times were the results Tails? (Ans:46)

4. Find  $x$  such that  $3^{1-2x} + 9 = 738$ . (Ans:  $-\frac{5}{2}$ )

5. If  $a + b = 4$  and  $a^2 + b^2 = 10$ , then what is the product of  $a$  and  $b$ ? (Ans: A)

- a) 3      b) 4      c) 5      d) 6      e) 7

### Grade 10-11

문제유형: Algebra (60%), Geometry (25%), Probability & statistics (15%)

Multiple choice: 10, Open-end problem I(Answer Only):10, and Open-end problem II(Answer and all your work):3 (total :23 problems)

1. A square is inscribed inside a circle of radius 6 and another circle is inscribed inside the square.

What is the radius of the inner circle?(Ans: C)

- a) 3      b)  $\sqrt{3}$       c)  $3\sqrt{2}$       d)  $\sqrt{5}$       e)  $\sqrt{6}$

2. What is the sum of the two roots of  $100^x - 10^{x+1} + 21 = 0$ ? (Ans:501)

3. How many distinct ways can one place 10 indistinguishable balls into three distinct boxes, with the restriction that each box must receive at least one ball? (Ans: 36)