



## Potpourri – 8<sup>th</sup> Grade

1. **2 points:** The product of three positive integers is 120. The sum of the three positive integers is 15. What is the product of two larger integers?
2. **2 points:** How many six-digit positive integers are divisible by 15 and end in the digits “050”?
3. **2 points:** In an infinite geometric series, the first term is 7063 and the second term is 2018. What is the sum of the terms in the series? **Express your answer as an exact decimal.**
4. **3 points:** What is the repeating decimal,  $2.\overline{018}$  written as a mixed number in simplest form?
5. **3 points:** How many positive factors of  $10!$  are divisible by none of 2, 3, and 5?
6. **3 points:** How many five-digit palindromes are there such that the sum of the digits is 10?
7. **3 points:** What is the least common multiple of the numbers 57, 35, and 42?
8. **4 points:** Consider a “binadome” to be a base-10 number that, when written in binary, is a palindrome. How many binadomes are there that are less than the base-10 number 128?
9. **4 points:** How many seven-digit positive integers are there such that one of its digits is greater than the sum of the other six non-zero digits?
10. **4 points:** Using quarters, dimes, nickels, and/or pennies, in how many unique ways can 50 cents be made?