



Name: \_\_\_\_\_ School: \_\_\_\_\_

## 8-6-24 Delta Contest

### Sample Test 1

Correct answers are worth 1 point. Incorrect and blank answers are worth 0 points. You are given 30 minutes to complete the test and no calculators are allowed.

1. \_\_\_\_\_ It's chilly outside and Matt has to decide what to wear. He has three hats: one striped, one polka dot, and one plain. The same is true of his scarfs, and his pairs of socks. How many combinations can he wear?

2. \_\_\_\_\_ But wait! Matt hates when his hat and scarf have the same pattern. So how many combinations can he wear now? (Use the information from problem 1)

3. \_\_\_\_\_ Find the values of  $x$  for which the equation  $(x-1)^2 + 4(x-1) + 3 = 0$  is true.

4. \_\_\_\_\_ Davin and Connor are washing their car. When Davin washes the car by himself, it takes him 2 hours. Connor is a little quicker, so when he washes the car by himself it only takes him 1 hour and 30 minutes. If Davin and Connor wash the car together, how long will it take them?

5. \_\_\_\_\_ Of the positive integers less than or equal to 100, how many are divisible by 2 or divisible by 3, but not divisible by both 2 and 3.

6. \_\_\_\_\_ Henri and Juliet want to meet to eat lunch. To minimize the time they have to travel, they chose a restaurant between their houses. They leave their houses at the same time and arrive at the restaurant at the same time. If Henri walks 3 miles per hour, Juliet walks 4 miles per hour, and it takes them 2 hours to reach the restaurant, what is the distance between their houses?