



Mission Math Utah

Spring Competition

Elementary School Division: Free Response Test

March 16, 2019

Name: _____

General Information

- Do not open this test until you are instructed to do so.
- This section contains **10 free response questions**. You will have exactly **20 minutes** to work on them.
- On the provided answer form, write the answer you think is correct in the given answer blanks.
- The answer to each question is a positive whole number.
- Electronic devices, including calculators, must be turned off.
- You may do any work you want on this test, and you may keep the test once you are finished.

Grading

- Each correct answer will be worth 2 points.
- Each incorrect or blank answer will be worth 0 points.
- Only answers marked on the provided answer form will be scored.

These problems are meant to be challenging. Don't worry if you are unable to solve a problem. Try to focus on the problems you think you may be able to solve. You are not penalized for guessing, so **take an educated guess on any problems you are not able to solve**. If you finish before the time is up, use the remaining time to check your work.

1. One banana costs as much as two apples. If Taylor has enough money to buy 6 bananas, how many apples can Taylor buy?

2. Beth ate 5 slices of pizza, Abraham ate 7 slices of pizza, and Karen ate 4 slices of pizza. How many pizzas did the three friends eat in total? (A pizza has 8 slices.)

3. In a garden, there are 10 roses, 8 tulips, and 6 daffodils. All of the daffodils and half of the tulips are yellow. How many flowers in the garden are *not* yellow?

4. Creon made \$210 from shoveling driveways in January. If he charges \$15 for each driveway he shovels, how many driveways did he shovel in January?

5. The digits 2, 0, 1, and 9 can be arranged to form a 4-digit number, such as 1092 or 2019. What is the largest possible number that can be formed?

6. Today's date, 3/16/19, has the interesting property that the numbers of the month and the day add up to the number of the year; that is, $3 + 16 = 19$. How many days will it be until the next date with this property?

7. Adam and Billy each write two or three poems every day. Over a period of time, Adam wrote 27 poems while Billy wrote 37. How many days were in this period of time?

8. What is the largest three-digit number that is not a multiple of 3 or 7, and whose digits are all different and odd?

9. In a row are 30 pots of gold, labeled 1 through 30. Pot 1 contains one gold piece, Pot 2 contains two gold pieces, Pot 3 contains three gold pieces, and so on up to Pot 30, which contains 30 gold pieces. Edgar takes all the gold out of the pots that are labeled with a multiple of 3. Then, Allen takes all the remaining gold out of the pots that are labeled with a multiple of 5. Finally, Mr. Poe collects all the gold that remains. How many pieces of gold does Mr. Poe collect?
10. Rob, Sophia, and Tabitha begin running towards the end of a rainbow at the same time. Rob runs for 8 minutes, then rests for 3 minutes, then runs for 8 minutes, rests for 3, and so on. Sophia follows the same pattern as Rob, running for 30 minutes and resting for 4 minutes at a time. Tabitha follows this pattern as well, running for 45 minutes, then resting for 5 minutes at a time. What is the least amount of minutes, after starting, after which all three runners will be resting?