MARYMOUNT	MATHEMATICS SECOND MATH TEST 1 POWERS AND ROOTS 5th GRADE

NAME: _____

DATE: October 30th, 2020

OBJECTIVES:

1. **Students make use of the concepts of a base, an exponent and a power.**
2. **Students solve word problems involving the following situations: friends forwarding messages to friends, big squares made up of small squares, big cubes made up of small cubes.**

1. Place the following numbers in these three math statements: (3 points each)

1, 3, 3, 4, 4, 12, 12, 64, 81

a) $_^{_} = ___$

b) $_^{_} = ___$

c) $_^{_} = ___$

2. Place the following numbers in these three math statements: (3 points each)

1, 1, 2, 2, 3, 3, 4, 16, 27

a) $\sqrt[_]{_} = ___$

b) $\sqrt[_]{_} = ___$

c) $\sqrt[_]{_} = ___$

3. The math statement $6 \times 6 \times 6$ can also be named as: (1 point)
   a) 108 b) 6^3 c) 3^6

4. 18^2 can also be named as: (1 point)
   a) 324 b) 36 c) 20

5. The third root of 343 is equal to: (1 point)
   a) 5 b) 6 c) 7

6. "3 to the power of 5" is equal to: (1 point)
   a) 15 b) 81 c) 243

7. On Monday September 10th, Mariana sends a message to 4 friends. Each one of these friends forwards the message to 4 other friends on Tuesday. On Wednesday, each one of those friends forwards the same message to 4 other friends.
   a) If this pattern continues, how many people received the message on Thursday 13th? (give your answer as a power) (3 points)
   Answer:

   b) How many people shall be receiving the message on Sunday 16th ? (give your answer using a base and an exponent) (3 points)
   Answer:

Day	Number of friends receiving messages (as a power)	Number of friends receiving messages (as a product of repeated factors)	Power notation (base and exponent)
10th			
11th			
12th			
13th			
14th			
15th			
16th			

8. A big square is made up of 361 small squares. How many rows and columns does this big square have? (remember big squares have the same number of rows and columns)? (3 points)
   Answer:
9. A big cube is made up of 729 tiny cubes. What would the length, the width and the height of this big cube be if we know cubes have the same length, width and height? (3 points)
   Answer:

BONUS: (2 extra points)
If the pattern described on exercise 7 is to be repeated, how many people shall be receiving the message on September 23rd? (write your answer as a base and an exponent)
Answer:

Resources:

1) Math test 1 2020-2021
2) Class Exercises worked in math notebooks.