CalcuSolve 2020-21: 5th and 6th Grade Problems

1. (Group Problem) Antonio has $3.42 in his pocket consisting of all coins (pennies, nickels, dimes, and quarters only). What is the smallest number of coins he can possibly have in his pocket?

2. If the hands of a clock currently read 1:25, what time will the clock read in 62 and a half hours? (12-hour clock; don't worry about AM or PM)

   Hint: What happens every 12 hours?

3. Miguel and Artemis are counting out loud. If Miguel starts counting down from 100 by 3's (100, 97, 94, …) and Artemis starts counting up from 5 by 5's (5, 10, 15, …), then what numbers will both Miguel and Artemis say?

   Hint: Focus on multiples of 5.

4. Assume a 2 foot by 2 foot square is cut into 4 equal sized squares. Now assume each of these four smaller squares are also cut into 4 equal sized squares. What is the sum of the perimeters of all 16 of the smallest squares?

   Hint: Start with the perimeter of one of the squares.

5. Sal wants to arrange his Mario, Luigi, Bowser and Toad figures on his shelf from left to right. He cannot decide what order to put them in. If he wants to try every possible order, then how many different arrangements will he have to try?

   Hint: Start with how many choices he has for the first position and go from there…

6. Right now, Kareem is 4 times older than Nika. In 6 years, he will be twice as old as she. How old will both Kareem and Nika be 10 years from now?

   Hint: Focus on small numbers…

7. In a game of Fortnite solo Battle Royale, there are currently 64 players. Every time 45 seconds passes, the number of players remaining will be cut in half. How long will it be before the match is over (only one player left)?

   Hint: Think about how many times the 64 must be halved to get to 1.

8. Bobby's iPad will run out of charge in 3 hours and 46 minutes. He knows if he watches a movie on the iPad then the battery will drain twice as fast. What is the duration of the longest possible movie Bobby can watch completely on his iPad before the battery is drained of its charge?

   Hint: Just divide…

9. (Group Problem) An 8-foot long rod is cut into three pieces with lengths in the ratio 5:3:4. In inches, what is the length of the longest of the three pieces?