Calcusolve 2021: 5th and 6th grade answers

1. In the first round the two teams with the bye don't play but the other 124 teams play 62 games. In round two, the 62 winners and 2 first round bye teams play 32 games. In round 3, the remaining 32 teams play 16 games. In round 4, the remaining 16 teams play 8 games. In round 4 the remaining 8 teams play 4 games. In round 5 the remaining 4 teams play 2 games. In the final round the remaining 2 teams play 1 game and then there is a tournament winner. Thus, in total there will be 62+32+16+8+4+2+1=125 games played in the tournament.

2. In each grouping, first do the exponents from left to right to get
    $\frac{16}{8} + (3 \times 16 - 12 \div 6) - (10 \div 2 \times 25)$. Now in each grouping do multiplication/division
    from left to right to get $2 + (48 - 2) - (125)$. Now in each grouping do addition and
    subtraction from left to right to get $2 + (46) - 125$. Now that each grouping is resolved,
    just add/subtract the values remaining from left to right to get -77.

3. Overall, Billy has four choices for his shirt, hat and pants. That would be a total of 64 outfits. However, since we only want outfits where not every item is the same color, we have to subtract those 4 possibilities. Therefore, the answer is 60.

4. In 6 real hours, the actual time is 6:00 and the clock will have moved an apparent 18 hours and hence will also be indicating 6:00.

5. The equilateral triangle will have perimeter 6. Thus, the hexagon will have perimeter 36. Furthermore, the square will have side length of 18. Thus, the area of the square is 324 square inches.

6. Every minute of Roblox will take away two extra minutes of charge time. Thus, if she plays 1 minute of Roblox, she will only have 57 minutes left for regular use. If she plays 2 minutes of Roblox, there will be only 54 minutes left for regular use. Making a table of these possibilities will illustrate that playing 8 minutes of Roblox leaves 36 minutes for regular use and the use Roblox time plus regular use time add up to 44 minutes. Thus, the answer is 8 minutes.

7. He needs to get a total of 450 points. He currently has 356. Thus, he must get at least a 94 on the fifth test.

8. Following the proportions of the original recipe, there will 2 teaspoons of salt. To raise the serving up to 12 we need each ingredient measurement multiplied by one and a half. Thus, there will be 3 teaspoons of salt in the 12 serving recipe.

9. Take the 16000 and subtract the 736 fee to get 15264 which is the reduced price with the sales tax added on. Divide 15264 by 1.06 to get 14400 which is the reduced price without sales tax. Finally divide 14400 by 0.8 to get 18000 which is the original price of the car.