WUES Math Team Tryout Questions 2020

1. (3 points) what is the value of (185+278+579+2020)-(85+178+279+2019)?

2. (4 points) Winnie the Pooh said, "if you divide my age by 3 then add 8 years, the result is my age" How old is Winnie the Pooh?

3. (5 points) One bee can double the volume of honey in the Winnie the Pooh's pot every minute. If the bee keeps working non-stop, on the 112th minute the pot will be full, and the bee will be very tired. How many minutes would it take for 8 of the same bees to do the same? Assume that the pot was empty at the first and Winnie refrains from his usual "I wasn't going to eat it, I am just going to taste it"

4. (4 points) Tired of watching 8 bees filling the honey pot (you never can tell with bees) Winnie the Pooh starts to write whole numbers from 1 onwards: 1, 2, 3, 4, 5 and so on. He is not very good at math and writing, so he spends 1 minute per each number he writes. He will stop if the number he writes, multiplied by itself, is as close to 2020 as possible. How long will he be counting?

5. (4 points) At the math team tryouts students solved 1600 problems. In all, 3rd graders solved 200 more problems than 4th graders, and 4th graders solved 100 more than the 5th graders. How many problems did the 3rd graders solve?

6. (4 points) At the same math team, tryouts will end at 5pm on Tuesday. It will take 150 hours to grade them and email results. At what day of the week and what time exactly students should expect to see their results?

7. (5 points) Scrat (the pre-historical squirrel from Ice Age) has collected more than 250 acorns. When he tries to arrange them in rows of 3, there are 2 left over. When he tries to arrange them in rows of 5, there are 2 left over. When he tries to arrange them in rows of 7, there are 2 left over. What is the least number of acorns Scrat may have?

8. (6 points) how many whole numbers between 1 and 2020 have the digit 7 among their digits?

9. (6 points) the product of two number is 504 and each of the numbers is divisible by 6. However, neither of the two numbers is 6. What is the larger of the two numbers?

10. (7 points) AB, CD, EF, GH and JK are five 2-digit numbers. Different letters represent different digits. Find the greatest possible value of the quotient (AB+CD+EF)/(GH+JK)