Senior ROund 2 sample Instructions:
You have 1 hour 30 minutes.
Answer only. Do not hand up rough work.
Each question is worth 1 mark
No calculators allowed

1. Find the the slope (m) from this equation:

$$\frac{3}{4}y + 4 = 2(x - 1)$$

2. Solve for x a real number.

$$\frac{x-9}{2} - \frac{x-9}{3} = 1$$

3. The list p, q, r, s consists of four consecutive integers listed in increasing order. If $p + s = 109$, the value of $q + r$?
($4, 5, 6$ are consecutive integers. $4, 6, 8$ are non-consecutive.)

4. $1 + 2 + 3 + \ldots + 99 + 100 = 5050$ And so, what is $10 + 20 + 30 + \ldots + 990 + 1000 =$?

5. A rectangle has a perimeter of 48 cm. It's length is 17 cm. What is the width?

6. The number N is the product of all positive odd integers from 1 to 99 that do not end in the digit 5. That is, $N = 1 \times 3 \times 7 \times 9 \times 11 \times 13 \times 17 \times 19 \times \ldots \times 91 \times 93 \times 97 \times 99$. What is the last digit of N? (Last digit of 395 is 5)

7. Jules and Remy are buying bananas. In total, they buy 12 bananas. Jules buys 4 more bananas than Remy. How many bananas did Remy buy?

8. Evaluate: $1 - 2 + 3 - 4 + 5 - 6 + 7 - 8 + \ldots\ldots\ldots + 2019 - 2020$

9. Find m such that $\frac{2020+m}{2020-m} = 100$

10. Draw three lines: $y = 5$, $y = 1 + x$, and $y = 1 - x$. What is the area of the triangle formed by these lines?

11. At G.S. Name, 20% of all girls took part in maths competitions and 15 % of all boys took part. If 60% of the students are boys, what percentage of all students took part in the competition?

12. Isaac tosses/flips a coin 6 times. what is the probability that he gets exactly 3 heads?

13. How many positive whole numbers, including 1, divide exactly into both 40 and 72?

14. What is the units (ones) digit of the integer equal to $5^{2019} - 3^{2019}$? (The units digit of 456 is 6)

15. a, b, and c are positive integers (> 0) such that $a + b + c = 18$ What is the maximum value of $a \times b$?