**Senior Round 2**

**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:

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4*y* + 4 = 2(*x −* 1)

2. Solve for *x* a real number.

*x −* 9

2*−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 + *. . .* + 99 + 100 = 5050 And so, what is 10 + 20 + 30 + *. . .* + 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 *×* 3 *×* 7 *×* 9 *×* 11 *×* 13 *×* 17 *×* 19 *× . . . ×* 91 *×* 93 *×* 97 *×* 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 + *...........* + 2019 *−* 2020 9. Find *m* such that 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?

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14. What is the units (ones) digit of the integer equal to 52019 *−* 32019? (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 × b*?

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