MOSCROP MATH 8 ENRICHED ENTRANCE EXAM

APRIL 14, 2016

NAME:_____

ELEMENTARY SCHOOL:_____

Teacher: _____

Time: 1 hour 45 minutes

Part A is a NON-CALCULATOR section. Students are to complete part A without a calculator and then submit it to the teacher before moving on to Part B. Students have up to 40 minutes to complete Part A and a total of 1 hour and 45minutes for the entire exam.

In Part B and C, calculators are allowed. All their work and justification MUST be shown to earn full marks. All answers must be exact or accurately rounded to 3 decimal places unless specified otherwise.

The exam consists of 10 questions in Part A, 5 questions in Part B, and 3 questions in Part C. Each question in Part A is worth 2 marks, Part B is 3 marks, and Part C is 5 marks. You can earn full marks of each question in Part A by entering the correct answer in the indicated space. If your answer is incorrect, work must be shown to be given any partial marks.

Section	Questions	Values	Total	Score
Part A	10	2	20	
Part B	5	3	15	
Part C	3	5	15	
Total			50 marks	

PART A: (2 Points Each - 30 minutes) Math 8 Honours Entrance Exam

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Calculators are not allowed. You have 40 minutes to complete section A. You do not need to show your work. Full marks will be rewarded for correct answers. However if your answer is incorrect, part marks may be rewarded for correct work.

1. Given the equation, what is the value of "k"? $8 \times 15 \times 7 = 28 \times k$

2. Evaluate: $0.0001 \times 1000 \times 0.2$

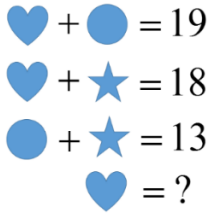
3. Evaluate: $\frac{3}{11} + \frac{9}{7} = \frac{A}{B}$ then find the value of "A" and "B"

4. If March 1 was on a Tuesday, then which day of the week does March 31st fall on?

5. Given the following values, arrange them from the least to the greatest:

$i)\ \frac{3}{7}$ $ii)\ \frac{4}{8}$ $iii)\ 0.\overline{44}$ $iv)\ 0.\overline{41}$ $v)\ \frac{4}{9}$ $vi)\ \frac{5}{11}$

6. Given the following equations, what is the value of the heart?



7. Evaluate the expression: $\frac{3xy+2x-y}{(x-y)^2}$ with $x=2$ *and* $y=\frac{2}{3}$

8. This is a multiple choice question. Choose the best answer below: Suppose "A", "B", "C", "D", "E", and "F" are all positive integers, then which of the statements below are equal to the expression:
$A-B+C-D+E-F$

i) $(A+C)-(B+D+E+F)$

ii) $(A+C+E)-(B-D-F)$

iii) $(A+C+E)-(B+D+F)$

iv) $A-B-C+D-E+F$

v) $A-B-C-D-E-F$

9. Suppose John has a job that pays him each day according to following scale: He gets paid $7 per hour for the first ten hours, then $8 per hour for the next 20 hours, then $9 per hour for the next 30 hours, and $10 per hour for the next 40 hours. How much will John make if he works 78 hours?

10. Given the table of values, what is the value in the missing box?

x	1	2	3	4	5	6	21
y	9	15	21	27	33	39	?

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Part B) (3 Points Each 30 minute) Math 8 Honours Entrance Exam

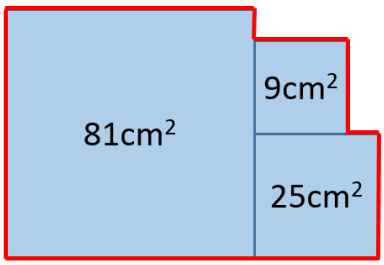
Calculators are allowed. Please show all your work and steps for each of the questions in part B and C. A detail explanation and is required to earn full marks for each question. A correct answer with a poor or unclear explanation will be given full marks.

11. The time it takes Dave to take 3 steps, John can take 4 steps. In 20 minutes, John takes 1600 steps. How many steps can Dave take in 1 minute?

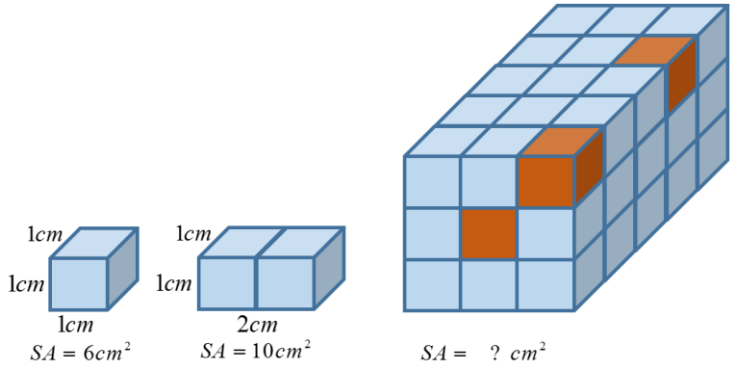
12. How many numbers between 1 to 50 are divisible by either 3, 4, or 7.

13. A number less than 100 is divisible by 5. When this number is divided by 4, the remainder is 1. When this number is divided by 7, the remainder is also 1. What is this number?

14. Given the three squares and its areas written inside, find the perimeter of the entire solid:



15. The following object is made up of 45 tiny unit cubes that are 1cm by 1cm by 1cm. The surface area of one unit cube is $6cm^2$ because you can see six sides. If the three darker cubes are removed, what would the surface area be? For instance, how many unit faces would you see?



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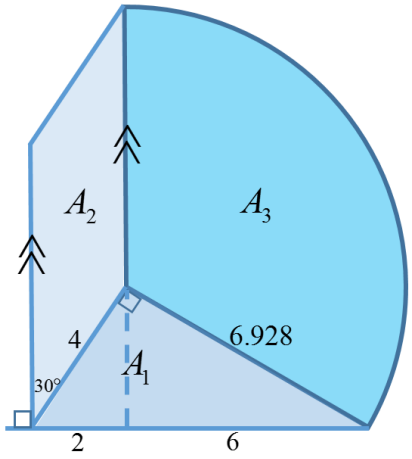
Part C: (5points Each 20 minutes) Math 8 Honours Entrance Exam

1. The following solid is made of a right triangle, a parallelogram, and a sector which is a fraction of a circle. Find the area of each solid: A1, A2, and A3, then find the sum for the area of the entire solid.



2. A student is playing a game where he can only gain 2 points or 3 points at a time. If a player has 15 points, how many ways can they obtain these points, where the order matters? For instance, two ways they can earn his points are: 2, 2, 2, 2 ,2, 2, and then 3 OR 2, 2, 2, 2, 2, 3, and then 2.

3. A student plays a game where she rolls a dice three times. She gets one point for getting a one, two points for getting a two, three points for getting a three, and so on. She then takes the sum of all three rolls. If she gets a sum of 9 or more, she wins. What is the probability that she wins?