MOSCROP MATH 8 ENRICHED ENTRANCE EXAM

APRIL 11, 2013

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 45 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. Students will need to show all their work and justification 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 2 questions in Part C. Each question in Part A is worth 3 marks, Part B is 4 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	3	30	
Part B	5	4	20	
Part C	2	5	10	
Total			60 marks	

Part A:

1. The numbers 1, 3, 5, 7 are used to create two 3-digit numbers. What is the largest possible difference between the two 3-digit numbers?

    Answer:_____

2. What is the product of $15 \times 12 \times 18 \times 20$?

    Answer:_____

3. A point is divided into five different angles as shown in the diagram below. What is the measure of angle "x"?
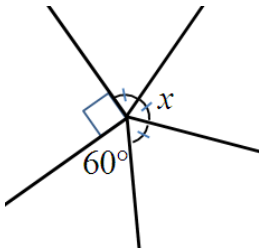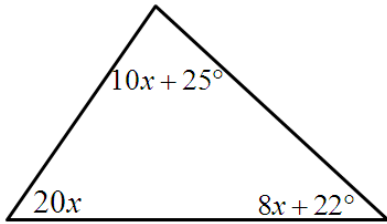

    Answer:_____

4. The following table shows the number of wins each player has from playing "UNO". IF there are five more games to be played, how many times does Chris need to win in order to have 30% of all the wins?

Player	Number of Wins
Ben	5
Chris	3
Tim	2
Jason	5
Total Wins	15

    Answer:_____

5. Given each angle in the diagram, what is the value of "x"? Give your answer as a fraction in lowest terms.

$10x + 25°$

$20x$

$8x + 22°$

Answer:_____

6. Tom has $500 in his account and adds $20 into his account each day. Sandra has $200 in her account and adds $75 into her account each day. After how many days will Sandra have more money in her account?

Answer:_____

7. Evaluate and simplify the expression as a single fraction in lowest terms: $\dfrac{\dfrac{2}{3} - \dfrac{7}{5}}{2 + \dfrac{3}{4}}$

Answer:_____

8. What is the sum of the series: $1 + 3 + 5 + 7 + ... + 39 + 41$ is?

Answer:_____

9. The result of $(4 - 3) + (5 - 4) + (6 - 5) + ... + (103 - 102)$ is?

Answer:_____

10. Given that all the rows, columns and diagonals have the same sum, what is the value of "x"?

		24
97	−18	
y		x

Answer:_____

PART B:

1. Express the number 220 as the sum of 8 consecutive whole numbers.

Answer:_____

2. Three people are weighed two at a time in all possible ways: Andy, Bob, and Chris. Andy and Bob weigh 115kg, Andy and Chris weigh 98kg, and Bob and Chris weigh 93kg. What is the weight of the heaviest person?

Answer:_____

3. Given that a rectangle has an area of 48cm^2 and all sides have integer lengths, what is the largest possible perimeter for the figure?

Answer:_____

4. In the addition of the three-digit numbers shown, the letters B, D, E, F ,and G each represent a different digit. What is the sum of D + F + G ?

$$
\begin{array}{r}
B \quad D \quad E \\
B \quad F \quad E \\
+ \quad B \quad G \quad E \\
\hline
2 \quad 0 \quad 1 \quad 3 \\
\end{array}
$$

Answer:_____

5. Five students wrote a quiz with a maximum score of 50. The scores of four of the students were 42, 43, 46, and 49. The score of the fifth student was N. The average (mean) of the five students' scores was the same as the median of the five students' scores. What are all the possible of values of N? Show all your work and steps

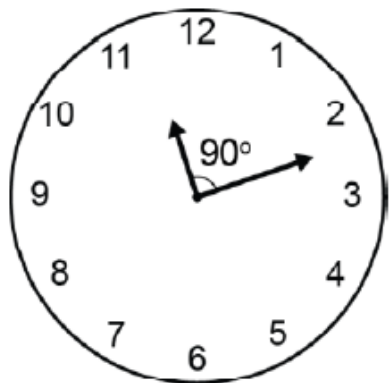Answer:_____

PART C:

1. On a digital clock, some of the digits are displayed more often than others. In a 12 hour period of time, from 1:00 to 12:59, there are 720 minutes. Let "X" be the number of minutes that have atleast one digit "1" and let "Y" be the number of minutes that have atleast one digit "9". For instance, 10:42 have a digit-1 and no digit-9. What is the difference between "X" and "Y".?

Answer:_____

2. To the nearest second, how much time after 11 o'clock are the hands of a clock perpendicular for the first time?

Answer:_____