MOSCROP MATH 8 ENRICHED ENTRANCE EXAM

APRIL 10, 2014

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. 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 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:

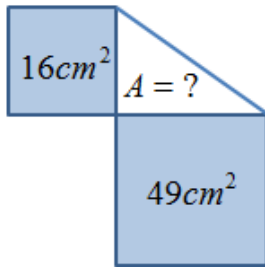1. Evaluate the following expression $\dfrac{2}{3}+\dfrac{3}{4}+1\dfrac{4}{5}$?

Answer:_____

2. What is the product of $2\times3\times4\times5\times5\times7$?

Answer:_____

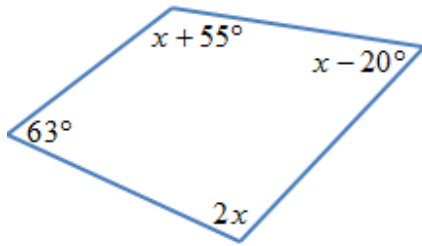3. Given the area of the two squares in the diagram, what is the area of the triangle on the top right?

Answer:_____

4. Given the following diagram, how many stars should we add so that 36% of all the objects would be stars?

Answer:_____

5. Given each angle in the quadrilateral, what is the value of "x"?

Answer:_____

6. If five pencils cost $4.85 and 3 pens cost $6.42, how much would 2 pencils and 2 pens costs?

Answer:_____

7. Jim scored 80, 72, and 95 on his first 3 tests. What must he get on his last test to get an average of 85%?

Answer:_____

8. Given the following diagram, draw the image after the triangle is reflected over both dotted lines and then shifted 5 units up?

l_1

l_2
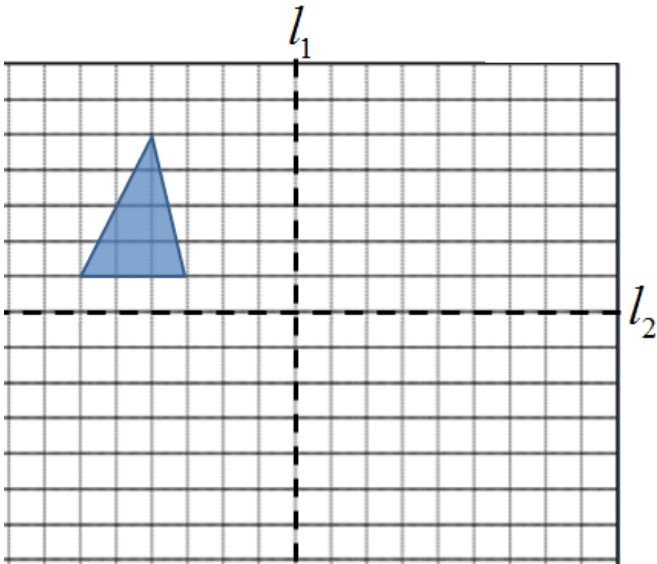
Answer:_____

9. In a math class 80 students, 60% of them are born in Canada. Of all students born in Canada, 2/3 are female. Of all the students that are born in Canada and female, half of them wear glasses. How many students in the classroom are born in Canada, female, and wear glasses?

Answer:_____

10. Suppose there is a relationship between the "x" and "y' variables and is displayed in the table of values below. What is the value of "m"?

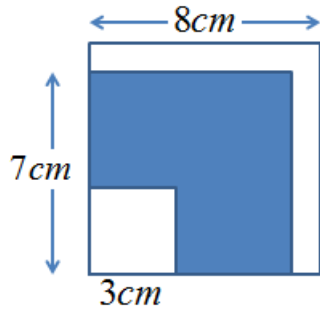| x	y
12	1
9	$\frac{4}{3}$
6	2
3	4
m	8

Answer:_____

PART B:

1. The following image has three overlapping squares with sides lengths of 8cm, 7cm, and 3cm. What is the area of the shaded region?
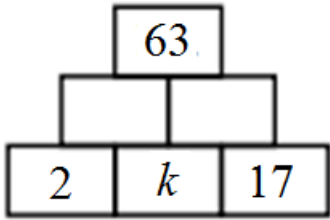

Answer:_____

2. A very long test has 99 questions, numbered 1 to 99. The test is 9 pages long, and each page has the same number of questions. What is the number of the fifth question on the fifth page?

Answer:_____

3. A number is put in each of the small rectangles below so that the number in any small rectangle is equal to the sum of the numbers in the two rectangles that it sit on. What number should be put in the rectangle labelled "k"?
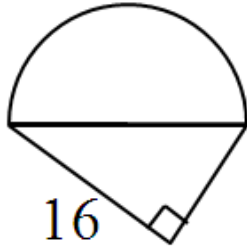
63

2	k	17

Answer:_____

4. A rectangular prism with dimensions 9cm by 33cm by 21cm is painted red on its surface. The prism is cut into 3 by 3 by 3 cubes. If one cube is selected randomly, what is the probability that only one side of the cube is painted red? Express your answer as a fraction.

Answer:_____

5. The area of the semi circle is $200\pi cm^2$. Determine the length of side "x"

Answer:_____

PART C:

1. There are two spinners. The first spinner is divided into 8 equal sectors numbered 1 to 8. The second spinner is divided into 6 equal sectors numbered 1 to 6. A spinner is selected at random and then spun 3 times. Given that the first two spins resulted in 4's, what is the probability that the last spin will also result in a 4?
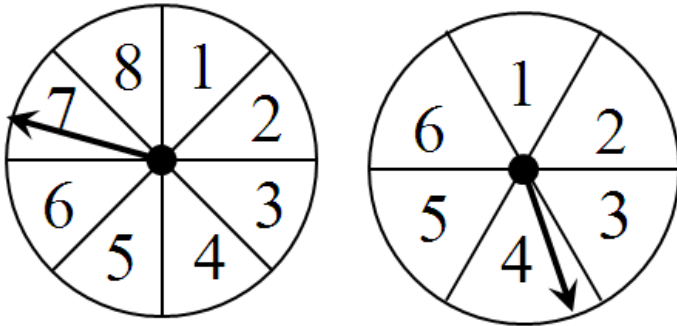
Answer:_____

2. If "k" is an integer, find all the value(s) of "k", so that "N" would be a perfect square:

$$N = \left(k^2 + 10\right)\left(2k^2 - 39\right)$$