

MOSCROP MATH 8 ENRICHED ENTRANCE EXAM

APRIL 11, 2017

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 45 minutes 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	

Name: _____

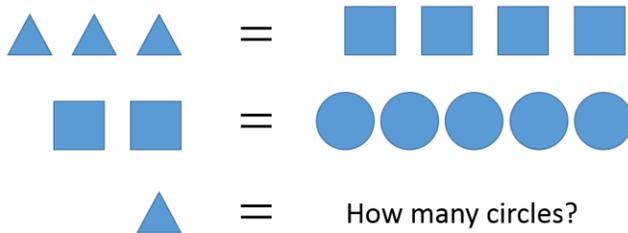
Elementary School: _____

Part A:

1. What is the value of "N": $N = 14 \times 30 \times 4 \times 13$

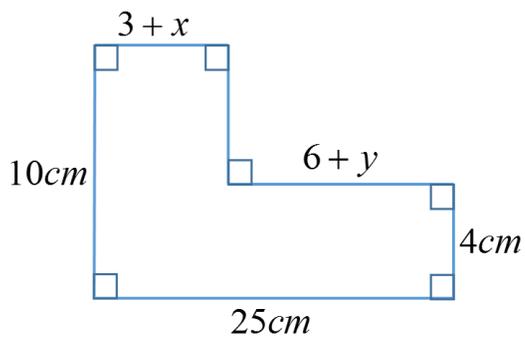
Answer: _____

2. How many circles is one triangle equal to?



Answer: _____

3. What is the perimeter of the following solid? [The perimeter is the distance around the object]

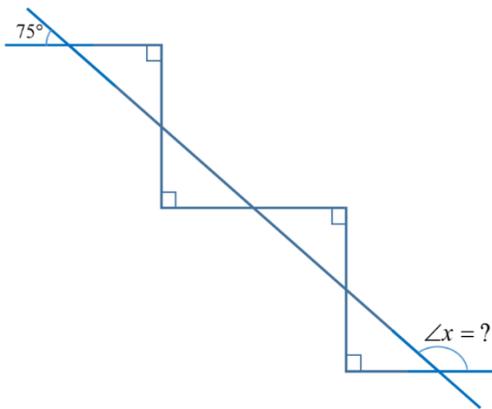


Answer: _____

4. Allan works at a job that pays him \$1 on the first day, \$2 on the second day, \$3 on the third day, and so on. The pay increases by \$1 each day forward. However, transportation costs to get to work and back is \$1 each day. By the end of 20 days, how much money will he have made in total?

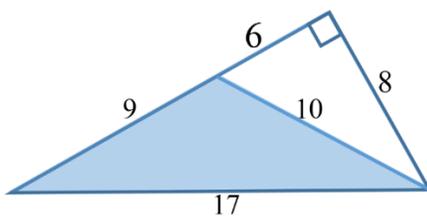
Answer: _____

5. What is the value of angle "x"?



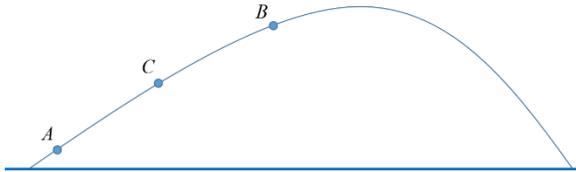
Answer: _____

6. Find the area of the shaded region:



Answer: _____

7. Mary can walk downhill twice as fast as he can walk uphill. For instance, she can walk downhill at 4km/h and uphill at 2km/h. If it took Mary 24 minutes to go uphill from point A to point B, then how many minutes will it take her to go from point "C" to "B" and then back to "A"? Note: Point "C" is the midpoint of AB.



Answer: _____

8. Given that "A" is a single digit number and "A A" is a double digit number. If the sum of the first equation is 100, then what is the sum of the second equation?

$$\begin{array}{r}
 A \ A \\
 A \ A \\
 \quad A \\
 \quad A \\
 + \ A \\
 \hline
 1 \ 0 \ 0
 \end{array}$$

$$\begin{array}{r}
 A \ A \ A \\
 A \ A \ A \\
 \quad A \ A \\
 \quad A \ A \\
 + \quad A \\
 \hline
 ? \ ? \ ? \ ?
 \end{array}$$

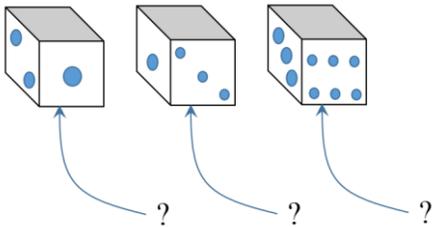
Answer: _____

9. If $a = \frac{1}{3}$ and $b = \frac{2}{5}$, then what is the value of:

$$(a + b) \times (a - b) \div (a \times b)$$

Answer: _____

10. A dice has six sides and opposite sides of a dice add to 7. For instance, if the top side is 4, then the bottom side must be 3. If I rolled 3 dice, and the sum of all the sides that are showing adds to 54, then what is the sum of the 3 sides that is covered?



Answer: _____

Name: _____

Elementary School: _____

PART B:

1. David has only quarters (\$0.25), dimes (\$0.10), nickels (\$0.05), and pennies (\$0.01). Which value between 0 to \$1.00 **requires** the most number of coins to make? For instance, 14 cents requires at least 5 coins: 1 dime and 4 pennies. Note: There can be more than one answer. You need all answers to get full marks.

Answer: _____

2. A 60 meter long wire is cut into 3 pieces. The second piece is twice as long as the first and the third piece is three times as long as the first. Each piece of wire is bent to form a square. What is the total area of all three squares?

Answer: _____

3. Amy, Brad, and Cindy each wrote a test out of 100 and received a mark that is a whole number. The average score between Amy and Brad is 75% and the average mark between Brad and Cindy is 80%. If Brad got the highest mark, then what is the greatest possible average mark between Amy and Cindy?

Answer: _____

4. Jamie places letters of the alphabet onto wooden blocks and lines them up in a straight line. The first letter he puts on is "A", the next one is "D", the next is "G", and so on, skipping two letters at a time. He keeps putting blocks in a straight line and makes more blocks for the letters in the alphabet if they are already used. What letter is on the 1000th block he puts on the line?



Answer: _____

5. What is the smallest integer that if divided by 5, it leaves a remainder of 2, if divided by 8, leaves a remainder of 6, and when divided by 3, leaves a remainder of zero?

Answer: _____

Name: _____

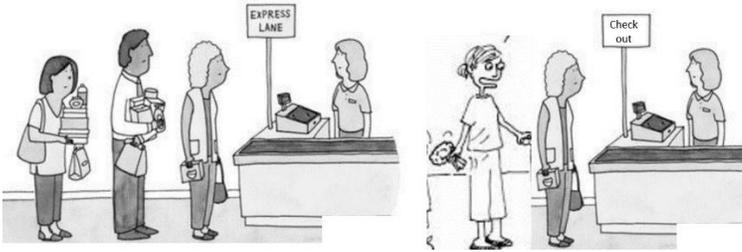
Elementary School: _____

PART C:

1. A palindrome number is a number that is the same when read forward and backwards. For instance, 1221, 77, 1234321 are all palindromes. How many numbers between 11 to 9999 [inclusive] are palindromes and also divisible by 3? [Divisible means that it can be divided evenly by a number leaving a remainder of zero]
 - A) How many two digit numbers are palindromes and also divisible by 3
 - B) How many three digit numbers are palindromes and also divisible by 3
 - C) How many four digit numbers are palindromes and also divisible by 3

Answer: _____

2. Five people: Amy, Betty, Chris, Dave, and Emily, all line up to pay for their merchandise at a store at two different check out, a Regular lane check out and an Express lane check out. Amy and Betty must be on different lines and Emily can not be the first person on either line that she is in. How many ways can the five people line up between the two check out lanes?



Answer: _____