

Print ID # _____

School Name _____

Student Name _____ (Print First, Last)

100

2014 Edmonton Junior High Math Contest

Part A: Multiple Choice

Part B (short answer)

Part C(short answer)

1.
2.
3.
4.
5.

6.	15.
7.	16.
8.	17.
9.	18.
10.	19.
11.	PRINT NEATLY
12.	
13.	
14.	

Part A: _____ × 4 + _____ × 2 = _____	Blank answers ≤ 3.
Correct blank	
Part B: _____ × 5 = _____	MARKER ONLY
Correct	
Part C: _____ × 7 = _____	
Correct	
Total:	= _____

Instructions:

1. Calculator, grid paper and scrap paper are permitted. You may write on the booklet.
2. Programmable calculators and cell phones are not allowed.
3. Each correct answer in Part A is worth 4 points, each correct answer in Part B is worth 5 points, and each correct answer in Part C is worth 7 points. In Part A each blank is worth 2 points each up to a maximum of 3 blanks.
4. Each incorrect answer is worth 0 points.
5. Unanswered questions in Parts B and C are worth 0 points.
6. You have 60 minutes of writing time.
7. When done, carefully REMOVE and HAND IN this TOP page. You may keep the contest. GOOD LUCK!

Edmonton Junior High Math Contest 2014

Part A: Multiple Choice: Each correct answer is worth 4 points. Each unanswered question is worth 2 points to a maximum of 3 unanswered questions.

1. Which of these numbers is greater than its reciprocal?

- A. $-1.\bar{5}$ B. 0.995 C. -99.9% D. $0.\bar{3}$ E. $\frac{2}{5}$

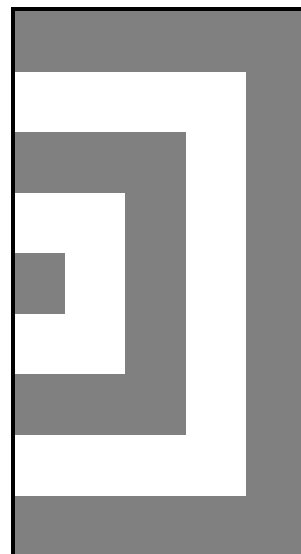
2. What number is doubled when $\frac{3}{4}$ of it is subtracted from 99?

- A. 32 B. 36 C. 40 D. 44 E. 52

3. A target is made of dark and white strips of equal width as shown at the right.

If a dart is thrown and lands randomly inside the target, what is the probability that it will land on white?

- A. $\frac{2}{5}$ D. $\frac{1}{2}$
B. $\frac{3}{8}$ E. $\frac{1}{3}$
C. $\frac{4}{9}$

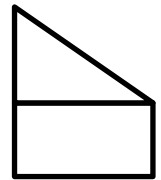


4. How many 2-digit whole numbers less than 40 are divisible by the product of its digits?
- A. 5 B. 4 C. 3 D. 2 E. More than 5
5. A florist has 72 roses, 90 tulips and 60 daffodils, and uses all of them to make as many identical bouquets as possible. How many flowers does the florist put in each bouquet?
- A. 6 B. 18 C. 24 D. 29 E. 37

Part B: Short Answer: Place the answer in the blank provided on the answer sheet. Each correct answer is worth 5 points.

6. A rectangle has an area of 48 cm^2 , and a perimeter of 28 cm. What is the length of the rectangle's diagonal, rounded to the nearest whole centimeter?

7. When a 2-digit number is multiplied by the sum of its digits, the product is 952. What is the 2-digit number?
8. Twenty-six people are seated in a circle, and are lettered alphabetically from A to Z. Beginning with Person A, and proceeding in a clockwise direction, each alternate person leaves the circle. What is the letter of the last person to leave?
9. In the rectangle BCDE, $BC=30$ cm. A is on the extension of EB, and $AC=34$ cm. The area of triangle ABC is 30 cm^2 less than half of the area of BCDE. What is the perimeter of the quadrilateral ACDE?



10. The age of a tortoise is 52 years more than the combined age of two elephants. In 10 years, the tortoise will be twice as old as the two elephants combined. How old is the tortoise now?
11. The angle bisectors of the two acute angles of obtuse triangle, $\triangle XYZ$, intersect at Point W. The measure of $\angle Z$ is 98° . What is the measure, in degrees, of $\angle XWY$?
12. Maria purchased a number of peaches and apples. The mean mass of the peaches is 170 g. The mean mass of the apples is 140 g. The mean mass of all the fruit is 152 g. What is the ratio of the number of peaches to apples purchased?

13. Two sides of a scalene acute triangle measure 12 cm and 13 cm. If the length of the third side is also an integer, then how many lengths are possible for the third side to be?
14. What is the largest n such that n^n is an n -digit number?

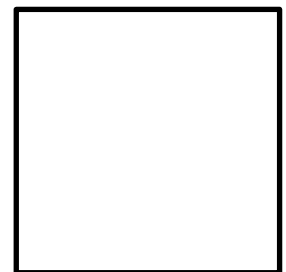
Part C: Short Answer: Place the answer in the blank provided on the answer sheet. Each correct answer is worth 7 points.

15. Consider the 2014 digit number consists of 2013 nines followed by 1 one.

$$\overbrace{99\dots99}^{2013} 1$$

The smallest factor is 1 and the largest factor is the number itself. Let M be the second smallest factor and N be the second largest factor. What is the sum of the digits of M and N ?

16. $ABCD$ is a square with $AC = 49.5$ cm. P is a point inside $ABCD$ such that $PB = PC$, and the area of triangle PCB is one third of the area of $ABCD$. What is the length, in cm., of PA ? Round your answer off to the nearest integer.



17. A three-digit number is equal to 17 times the product of its digits, and the hundreds digit is 1 more than the sum of the other two digits. Find all such three-digit numbers.

18. A magazine receives 32 articles, of length 1, 2, ..., 32 pages respectively. The first article starts on page 1 and all other articles start on the page after the preceding article. The articles may be arranged in any order. What is the maximum number of articles that can start on an odd-numbered page?

19. The diagram shows nine points as shown. How many triangles are there whose vertices are chosen from the nine points?

