

UNIVERSITY OF NEW BRUNSWICK

UNIVERSITÉ DE MONCTON

**36th NEW BRUNSWICK
MATHEMATICS COMPETITION**

Thursday, May 3rd, 2018

GRADE 9

INSTRUCTIONS TO THE STUDENT:

1. Do not start the examination until you are told to do so.
2. You are permitted to use rough paper. No other aids are necessary.
3. This is a multiple choice test. Each question is followed by five answers marked A, B, C, D, E. Only one is correct. When you have decided on your choice, mark the appropriate letter on your answer sheet using the pencil provided.
4. Problems are worth 3 points each in part A, 4 points each in part B, and 5 points each in part C. The penalty for incorrect answers is one quarter of the points assigned for that question. No penalty is assessed for answers which are left blank.
5. Diagrams are NOT drawn to scale. They are intended as aids only.
6. You have 60 minutes to answer the questions.
7. The use of calculators in the examination room is not allowed.

Part A

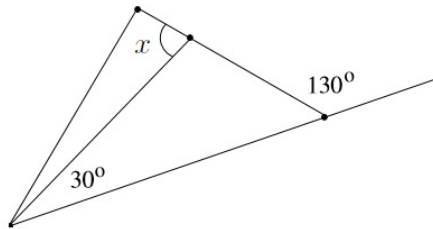
1. What is the value of: $0.1 + 0.12 + 0.123 + 0.1234$?

- (A) 0.12345 (B) 0.1370 (C) 0.1577 (D) 0.4259 (E) 0.4664
-

2. At the Olympics, Alex finished the 200 m freestyle swim race in 120 seconds. If Alex could maintain the same speed, how much time would it take for Alex to swim 1 km?

- (A) 360 seconds (B) 600 seconds (C) 720 seconds (D) 1200 seconds (E) 1680 seconds
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3. Find the measure of the angle labelled x in the diagram.



- (A) 70° (B) 75° (C) 80° (D) 100° (E) 160°
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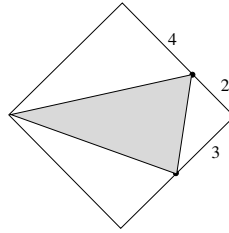
4. How many prime numbers are there between 10 and 30?

- (A) 3 (B) 4 (C) 5 (D) 6 (E) 7
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5. In a class of 20 students, each student is given either 2 black pens or 3 blue pens. If there are 48 pens in total, how many of the students have 3 blue pens?

- (A) 6 (B) 8 (C) 10 (D) 12 (E) 14
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15. The outer polygon is a square. What is the area of the shaded triangle?



- (A) 10 (B) 12 (C) 14 (D) 16 (E) 18
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16. If a chicken-and-a-half can lay an egg-and-a-half in a day-and-a-half, how many eggs do a dozen chickens lay in a dozen days?

- (A) 12 (B) 18 (C) 24 (D) 96 (E) 144
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17. There are 20 people in a room, and each person shakes hands with everyone else exactly once. How many handshakes will there be?

- (A) 100 (B) 171 (C) 190 (D) 380 (E) 400
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18. If 23% of N is 16, what calculation gives N ?

- (A) $0.23 \div 16$ (B) 0.23×16 (C) $16 \div 0.23$ (D) $(23 \div 16) \times 100$ (E) $16 \times 23 \times 100$
-

19. A tournament invited teams of 7 people and teams of 10 people to register for the events. A total of 401 people registered (with everyone on only one team). If G is the greatest number of teams that could have been registered and L is the least number of teams that could have been registered, then $G + L$ is:

- (A) 56 (B) 82 (C) 91 (D) 97 (E) 115
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20. Two red books and two blue books are randomly placed in order on a shelf. What is the probability that both of the red books are to the left of both of the blue books?

- (A) $\frac{1}{12}$ (B) $\frac{1}{8}$ (C) $\frac{1}{6}$ (D) $\frac{1}{3}$ (E) $\frac{1}{2}$
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