The University of the West Indies
The 2015 Junior Mathematics Olympiad

First Round Examination
Wednesday, February 25, 2015

This examination consists of fifteen multiple-choice questions. For each one, decide whether (a), (b), (c), (d), or (e) is the best response. Then fill in the circle for that letter in the answer book provided. (Use the page marked "Multiple Choice Page".) Each question is worth 5 marks.

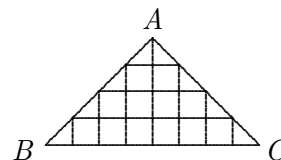1) Which of the expressions below has the greatest value?

    (a) $2 \times 0 + 1 \times 5$ (b) $2 \times (0+1) \times 5$ (c) $2 + 0 + 1 + 5$

    (d) $(2+0) \times (1+5)$ (e) $2 + (1 \times 0) + 5$

2) Mark said to his friends, "If I had picked twice as many apples as I picked, I would have 20 more apples than I have now. How many apples did Mark pick?

    (a) 40   (b) 20   (c) 35   (d) 10   (e) 30

3) In triangle ABC on the right, each small square has area $3\,\text{cm}^2$. What is the area of triangle ABC?

    (a) $48\,\text{cm}^2$ (b) $12\,\text{cm}^2$ (c) $36\,\text{cm}^2$

    (d) $16\,\text{cm}^2$ (e) $42\,\text{cm}^2$

4) In the equation $\square \times \square = 2 \times 2 \times 3 \times 3$, the value of $\square$ is:

    (a) 2   (b) 3   (c) 2×2 (d) 3×3 (e) 2×3

5) Adelaide has 37 CDs. Her friend Mary said, "If you gave me 10 of your CDs, then we would both have the same number of CDs." How many CDs does Mary have?

    (a) 10   (b) 17   (c) 22   (d) 27   (e) 32

6) Anna fell asleep at 9:30 pm and woke up at 6:45 am the next day. Her little brother Paul slept 1 hour and 50 minutes longer than she did. How long did Paul sleep?

    (a) 30 hr, 5 min   (b) 11 hr, 35 min   (c) 11 hr, 5 min   (d) 9 hr, 5 min   (e) 8 hr, 35 min

7) Peter chose one number from the numbers 51, 52, 53, 54, and 55. Then he placed the digit 0 between the digits of his number. What is the difference between Peter's new number and the one he first chose?

    (a) 500   (b) 50   (c) 550   (d) 450

    (e) It depends on the number he chose.

8) Ella came to Anna's birthday party 5 minutes earlier than Stan but 3 minutes after Iona. Iona left first. She left 2 minutes earlier than Stan and 5 minutes earlier than Ella. How many minutes longer was Ella at the party than Stan?

   (a) 2　　　　　　(b) 4　　　　　　(c) 6　　　　　　(d) 8

   (e) Stan was there longer than Ella.

9) If Tahjae had 6 marbles more than Lenroy has, they would have 34 marbles between them. In reality, Tahjae has 6 fewer marbles than Lenroy. How many marbles does Tahjae have?

   (a) 16　　　　　(b) 14　　　　　(c) 12　　　　　(d) 8　　　　　(e) 6

10) Together, Adam, Brianna, and Celine earned $2800 during their vacation. Adam earned twice as much as Brianna and four times as much as Celine. How much money did Celine earn?

   (a) $400　　　　(b) $700　　　　(c) $300　　　　(d) $600　　　　(e) $500

11) Rushane has 20 marbles in four plain colours: black, green, yellow, and blue. Sixteen marbles are not green, five are blue, and twelve are not yellow. How many marbles are black?

   (a) 3　　　　　　(b) 4　　　　　　(c) 6　　　　　　(d) 7　　　　　　(e) 8

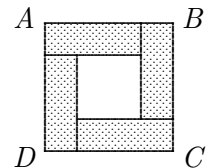12) Which of the numbers below is the greatest?

   (a) $10 \times 0.001 \times 100$　　　　(b) $0.01 \div 100$　　　　(c) $100 \div 0.001$
   (d) $1000 \times 1000 \div 100$　　　　(e) $0.1 \times 0.01 \times 10,000$

13) Marsha chose a number and added half of it to her chosen number. Her answer was 3 less than twice her original number. Which number did Marsha first choose?

   (a) 2　　　　　　(b) 4　　　　　　(c) 6　　　　　　(d) 8　　　　　　(e) 10

14) The square $ABCD$ shown on the right is made of a white square surrounded by 4 equal shaded rectangles. Each shaded rectangle has a perimeter of 40 cm. What is the area of square $ABCD$?

   (a) $80\,\text{cm}^2$　　　(b) $100\,\text{cm}^2$　　　(c) $160\,\text{cm}^2$　　　(d) $200\,\text{cm}^2$
   (e) $400\,\text{cm}^2$

15) Reneisha is making a square grid using matches that are 5 cm long. (A part from the upper left corner is shown on the right.) Each side of the grid will measure 1 m long. How many matches will Reneisha use?

   (a) 400　　　　　(b) 480　　　　　(c) 640　　　　　(d) 840
   (e) 960