

MATHSWELL 2017 Y9 MULTICHOICE

Question 1

Two brothers and three sisters form a single line for a photograph. The two boys refuse to stand next to each other. How many different line-ups are possible?

- A. 24 B. 36 C. 60 D. 72 E. 120

Question 2

A water tank is $\frac{5}{6}$ full. When 30l of water are removed from the tank, the tank is $\frac{4}{5}$ full. How much water does the tank hold when full?

- A. 180l B. 360l C. 540l D. 720l E. 900l

Question 3

The combined age of Alice and Bob is 39. The combined age of Bob and Clare is 40. The combined age of Clare and Dan is 38. The combined age of Dan and Eve is 44. The sum of all five ages is 105. Which of the five is the youngest?

- A. Alice B. Bob C. Clare D. Dan E. Eve

Question 4

The angles of a quadrilateral are in the ratio of 3 : 4 : 5 : 6. What is the difference between the largest and the smallest angles?

- A. 30° B. 40° C. 50° D. 60° E. 70°

Question 5

What is the value of $\frac{2}{5} + \frac{2}{50} + \frac{2}{500}$?

- A. 0.111 B. 0.222 C. 0.333 D. 0.444 E. 0.555

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Question 6

Which of the following calculations gives the largest answer?

- A. $2 - 1$ B. $2 \div 1$ C. 2×1 D. 1×2 E. $2 + 1$

Question 7

Susan is baking a cake. The recipe says that the cake should be baked in the oven for 1 hour and 35 minutes. She puts the cake in the oven at 11:40 am . At what time will the cake be cooked?

- A. 12:15 pm B. 12:40 pm C. 1:05 pm D. 1:15 pm E. 2:15 pm

Question 8

A download is 95% complete. What fraction is yet to be downloaded?

- A. $\frac{1}{2}$ B. $\frac{1}{5}$ C. $\frac{1}{9}$ D. $\frac{1}{10}$ E. $\frac{1}{20}$

Question 9

What is the value of $201 \times 7 - 7 \times 102$?

- A. 142800 B. 793 C. 693 D. 607 E. 0

Question 10

If you work out the values of the following expressions, then place them in increasing numerical order, which comes in the middle?

- A. $\frac{2}{3} + \frac{4}{5}$ B. $\frac{2}{3} \times \frac{4}{5}$ C. $\frac{3}{2} + \frac{5}{4}$ D. $\frac{2}{3} \div \frac{4}{5}$ E. $\frac{3}{2} \times \frac{5}{4}$

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Question 11

In Shakespeare's play *As You Like It*, Rosalind speaks to Orlando about "He that will divide a minute into a thousand parts." How many seconds would this be?

- A. 0.24 B. 0.6 C. 0.024 D. 0.06 E. 0.006

Question 12

Which of the following integers is not a multiple of 45?

- A. 765 B. 675 C. 585 D. 495 E. 305

Question 13

Last year at Wellington High School there were 600 Year 9 students, 315 of whom were girls. This year the roll has increased to 640. The proportion of girls is the same as last year. How many Year 9 girls are there at Wellington High School this year?

- A. 339 B. 338 C. 337 D. 336 E. 335

Question 14

What is the remainder when the square of 49 is divided by the square root of 49?

- A. 0 B. 2 C. 3 D. 4 E. 7

Question 15

In the window of Bryan's Bicycle Bazaar there are some unicycles, some bicycles, and some tricycles. Catherine sees that there are seven seats in total, thirteen wheels in total and more bicycles than tricycles. How many unicycles are in the window?

- A. 1 B. 2 C. 3 D. 4 E. 5

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Question 16

Which of the following numbers is closest to 2.015×510.2 ?

- A. 0.1 B. 1 C. 10 D. 100 E. 1000

Question 17

Which of the following fractions is not equivalent to an integer?

- A. $\frac{2011}{1}$ B. $\frac{2012}{2}$ C. $\frac{2013}{3}$ D. $\frac{2014}{4}$ E. $\frac{2015}{5}$

Question 18

A triangle has side lengths of 6 cm, 10 cm and 11 cm. An equilateral triangle has the same perimeter. What is the length of the sides of the equilateral triangle?

- A. 18 cm B. 11 cm C. 10 cm D. 9 cm E. 6 cm

Question 19

A cyclist cycles at 5 m/s. The wheels of the bike have a circumference of 125 cm. How many complete revolutions does each wheel make in 5 s?

- A. 4 B. 5 C. 10 D. 20 E. 25

Question 20

In a class, no two boys were born on the same day of the week and no two girls were born in the same month. Were another child to join the class this would no longer be true. How many children are there in the class?

- A. 7 B. 12 C. 18 D. 19 E. 20

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Question 21

Michael has a 2 m deep pool which is half full. During a rainstorm, 15 litres of water fell per m^2 . By how much did the water level in Michael's outdoor pool rise?

- A. 150 cm B. 0.15 cm C. 15 cm D. 1.5 cm E. It depends on the size of the pool.

Question 22

The mean score of the students who took a test was 60. Exactly 60% of the students passed the test. The mean score of the students who passed the test was 80. What was the mean score of the students who failed the test?

- A. 10 B. 20 C. 30 D. 40 E. 50

Question 23

Each of the children in a class of 33 children likes either English or Maths, and three of them like both. The number of children who like only English is half as many as like only Maths. How many students like Maths?

- A. 18 B. 20 C. 23 D. 24 E. 30

Question 24

Isabella draws some pentagons and counts the number of right-angles in each of her pentagons. No two pentagons have the same number of right-angles. Which of the following is a complete list of possible numbers of right-angles that could occur in Isabella's pentagons?

- A. 1,2,3 B. 0,1,2,3,4 C. 0,1,2,3 D. 0,1,2 E. 1,2

Question 25

Three inhabitants of the planet Zog met in a crater and counted each other's ears. Imi said, "I can see exactly eight ears", Dimi said, "I can see exactly seven ears". Timi said, "I can see exactly five ears". None of them could see their own ears. How many ears does Timi have?

- A. 2 B. 4 C. 5 D. 6 E. 7

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Question 26

The product of the ages of a father and son is 2015. What is the difference between their ages if both are still alive?

- A. 29 B. 31 C. 34 D. 36 E. None of these

Question 27

Two kangaroos, Ryken and Louise, start to jump at the same time, side by side and in the same direction. They then make one jump per second. Each of Ryken's jumps is 6 m in length. Louise's first jump is 1 m in length, her second is 2 m, her third 3 m, and so on. After how many jumps does Louise catch Ryken?

- A. 10 B. 11 C. 12 D. 13 E. 14

Question 28

Simon's watch is ten minutes slow, but he believes it is five minutes fast. Steve's watch is five minutes fast, but he believes it is ten minutes slow. At the same moment, each of them looks at his own watch. Simon thinks it is 12:00 pm. What time does Steve think it is?

- A. 11:30 am B. 11:45 am C. 12:00 pm D. 12:30 pm E. 12:45 pm

Question 29

Twelve girls met in a cafe. On average, they ate one and a half cupcakes each. No cupcakes were actually divided. None of the girls ate more than two cupcakes, and two of them had no cupcakes at all. How many girls ate two cupcakes?

- A. 2 B. 5 C. 6 D. 7 E. 8

Question 30

Nicole had to add 26 to a certain number. Instead she subtracted 26 and obtained -14 . What number should she have obtained?

- A. 28 B. 32 C. 36 D. 38 E. 42