

Question 1:

In the Year 8 group, every student swims or cycles and half the students do both. The total number of students who swim is the same as the total number of students who cycle. If 36 students in total swim, how many students are in the Year 8 group?

- A. 18 B. 48 C. 54 D. 60 E. 68
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Question 2:

Joseph's Cafe and Bar packs 37 lamingtons into bags of 3 or 4 so that there is no wastage. What is the maximum number of bags which contain 4 lamingtons?

- A. 4 B. 5 C. 6 D. 7 E. 8
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Question 3:

Mr Whyte found that every time he bought something at Newtown Mall, it took exactly 20% of the money he had in his wallet. He bought 3 items and had \$179.20 left. How many dollars did Mr Whyte have at the beginning of his shopping?

- A. \$287 B. \$310 C. \$350 D. \$370 E. \$350
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Question 4:

Eight thousand and seventy-two can be written as

- A. 80 072 B. 872 C. 8702 D. 8072 E. 8720
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Question 5:

A new loyalty card offers 4 “reward points” for each full \$25 spent. If an item worth \$480 is purchased, the number of reward points given is

- A. 19 B. 48 C. 76 D. 80 E. 192
-

Question 6:

On a map, the distance between two towns is 21 cm. The actual distance between these two towns is 105 km. What is the scale of the map?

- A. 1:5 000 B. 1:20 000 C. 1:50 000
D. 1:200 000 E. 1:500 000
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Question 7:

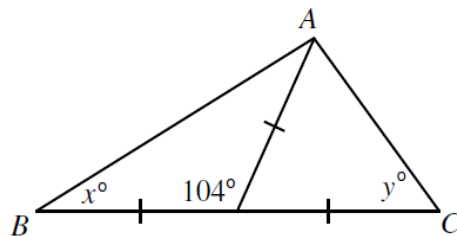
How many minutes will it take to walk 1.5 km if you walk at a constant speed of 5 km/h?

- A. 20 B. 24 C. 18 D. 15 E. 7.5
-

Question 8:

The value of $x + y$ in the triangle is

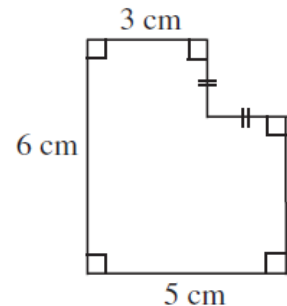
- A. 104° B. 76° C. 180°
D. 90° E. 166°



Question 9:

The perimeter of this shape, in centimetres, is

- A. 30 B. 28 C. 25 D. 24 E. 22



Question 10:

If $P = 100$ and $Q = 0.01$, which of the following calculations gives the largest result?

- A. $P + Q$ B. $P \times Q$ C. $\frac{P}{Q}$ D. $\frac{Q}{P}$ E. $P - Q$
-

Question 11:

When $x = 4$, the value of $x(x - 1)(x - 2)(x - 3)(4 - x)$ is

- A. 96 B. 24 C. 0 D. -6 E. -24
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Question 12:

At noon, Cyclist A starts 1 km ahead of Cyclist B and cycles north at 16 km/h. Cyclist B starts at the same time and cycles north at 24 km/h. How many minutes will it take for Cyclist B to catch Cyclist A?

- A. 1.5 B. 2.5 C. 3.75 D. 7.5 E. 8
-

Question 13:

Larger tyres were fitted onto a car, increasing the circumference of the wheels from 200 cm to 225 cm. On a trip of 180 km, the number of revolutions of each wheel was reduced by

- A. 5000 B. 1000 C. 2000 D. 10 000 E. 720 000
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Question 14:

The sum of all but one of the internal angles of a hexagon is 600° . The size of the remaining interior angle is

- A. 40° B. 120° C. 140° D. 160° E. 400°

Question 15:

The average of five numbers is 4.
Four of them are 1, 2, 3 and 4.
What is the fifth number?

- A. 6 B. 7 C. 8 D. 9 E. 10
-

Question 16:

The digits 3, 4, 5 and 6 can be put together to form 24 different four-digit numbers.
If these numbers are arranged from smallest to largest, which number is in the fifteenth position?

- A. 6345 B. 5436 C. 5346 D. 4563 E. 3654
-

Question 17:

A rectangular field which measures 250 m by 300 m is used for grazing horses. If each horse requires a minimum of 4000 square metres, what is the maximum number of horses that can be kept in the field?

- A. 1 B. 3 C. 12 D. 18 E. 19
-

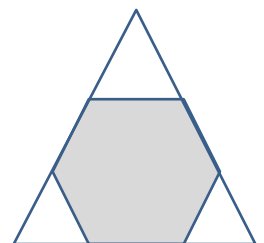
Question 18:

Towels are hung on a line to dry. Three pegs are used for each towel, but the towels are overlapped so that the towels next to each other share a peg. Which of the following rules can be used to find the number of pegs needed to hang up ' n ' towels.

- A. $2n + 1$ B. $2n + 2$ C. $3n - 1$ D. $3n$ E. $3n + 1$
-

Question 19:

A hexagon has been placed on a triangle as shown.
What fraction of the area of the triangle is covered by the hexagon?



- A. $\frac{1}{3}$ B. $\frac{1}{2}$ C. $\frac{3}{4}$ D. $\frac{2}{3}$ E. $\frac{7}{9}$
-

Question 20:

A $2 \times 2 \times 2$ cube is made from small $1 \times 1 \times 1$ plastic cubes.

What is the least number of these $1 \times 1 \times 1$ plastic cubes which will be needed to add to this cube to make a larger cube?

- A. 8 B. 19 C. 27 D. 56 E. 117
-

Question 21:

One man can cut the grass in a park in 60 minutes. Two people together can cut the same area of grass in 15 minutes. How many minutes does it take the second person to cut the grass on their own?

- A. 20 B. 25 C. 30 D. 35 E. 45
-

Question 22:

How big is the angle between the two hands of an analogue clock when the time is twenty to two?

- A. 85° B. 90° C. 150° D. 170° E. 180°
-

Question 23:

A ten cent piece has a radius of 12 millimetres. If the 10 cent pieces are laid end to end to form a coin trail, then how many kilometres would two million ten cent coins cover?

- A. 0.48 B. 4.8 C. 48 D. 480 E. 4800
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Question 24:

A jar containing fifty marbles weighs 1430 g. If the jar weighs 855 g when half full, then the weight, in grams, of one marble is

- A. 20 B. 21 C. 22 D. 23 E. 24
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Question 25:

The BMI (Body Mass Index) is found by dividing your mass in kilograms by the square of your height in metres. If someone has a mass of 53 kg and height of 160 cm, their BMI is closest to

- A. 20.7 B. 33.1 C. 41.9 D. 53 E. 1097
-

Question 26:

A car travels 318 km in 4 hours 20 minutes.
Which of the following is closest to its average speed?

- A. 60 km/h B. 65 km/h C. 70 km/h D. 73 km/h E. 75 km/h
-

Question 27:

At the foodbank, there is enough food to feed 12 families for 9 days.
How many days would this amount of food feed 4 families if they all received the same sized food parcels as before?

- A. 3 B. 12 C. 24 D. 27 E. 36
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Question 28:

Six discs numbered 1 through 6 must be placed on the six squares labeled 1 through 6, one per square, according to these rules:

- The number on a disc never matches the number in the square
- Disc #3 is on a square next to and to the right of disc #1
- Disc #6 is on a square next to and below disc #4

1	2	3
4	5	6

- According to these rules, disc #2 must be placed in which square?
- A. 1 B. 3 C. 4 D. 5 E. 6
-

Question 29:

In a three-digit whole number, the hundreds digit is the same as the units digit.
When the three-digit whole number is divided by the sum of its digits, the answer is 28.
The tens digit of the three digit whole number is

- A. 2 B. 3 C. 4 D. 5 E. 6
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Question 30:

What is the next number in the sequence:
15 60 240 960 _____

- A. 3900 B. 3840 C. 1920 D. 1275 E. 1240
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