

**Question 1**

If a 90 cm piece of string was cut into 4 pieces of 15 cm, what was the remaining length?

- a. 40 cm
- a. 30 cm
- b. 20 cm
- c. 25 cm

**Question 2**

If  $a*b$  means  $a + 2 \times b$ ,  $3*2=$

- A. 5 B. 6 C. 7 D. 8 E. 12

**Question 3**

A stack of 10 dice is made. Each dice is 2cm x 2cm x 2cm. Assuming there are no hidden gaps, what is the volume of the tower?

- a. 40cm<sup>3</sup>
- a. 80cm<sup>3</sup>
- b. 160cm<sup>3</sup>
- c. 200cm<sup>3</sup>

**Question 4**

Which is the odd one out?

- a. Foot
- b. Mile
- c. Millimetre
- d. Inch

**Question 5**

A red and green dice are tossed. How many ways can the sum of the two dice equal 9?

- a. 1
- b. 2
- c. 3
- d. 4

**Question 6**

Dr Ekans Repus has made a mysterious glowing red substance that increases its size by 100% every minute. At 10:00am he releases a small quantity of it into a castle next door to his laboratory and by 6:00pm it has burnt down the castle. At what time does the substance burn  $\frac{1}{16}$  of the castle?

- a. 5:56pm
- b. 5:44pm
- c. 10:30am
- d. 10:00am

**Question 7**

When Madeline went to the market on Monday she bought a carrot and a cabbage for her rabbits, Bubble and Squeak. It takes her rabbits 45 minutes to eat a whole cabbage, but Madeline only lets them eat for five minutes a day. What day would they be finished with the cabbage if they don't eat anything on the weekends?

- a. Friday
- b. Thursday
- c. Tuesday
- d. Wednesday

**Question 8**

How many factors does 28 have?

- A. 3   B. 4   C. 5   D. 6   E. 14

**Question 9**

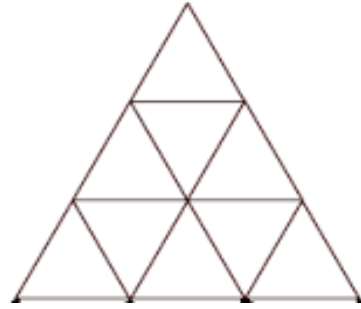
If Lucy had a bag of sweets and she gave half to her friends, and she gave a third of the remaining to her teacher and she still had 12 sweets for herself. How many did she have originally?

- A. 24   B. 30   C. 36   D. 72   E. 108

**Question 11**

How many triangles of any size are in this shape?

- A. 8 B. 8 C. 11 D. 13 E. 15



**Question 12**

How many rectangular cereal boxes measuring  $7 \times 25 \times 50$  cm can be stacked in a rectangular box measuring  $49 \times 100 \times 160$  cm?

- A. 84 B. 86 C. 89 D. 90 E. 96

**Question 13**

If  $n$  is a positive integer and  $4 < n < 12$ , for how many different values of  $n$  is there a triangle with sides of lengths 3, 8, and  $n$ ?

- A. 5 B. 7 C. 8 D. 9 E. 11

**Question 14**

What is the value of  $(7 + 3) - (-8 + 2)$ ?

- A. 0 B. 4 C. 10 D. 16 E. 20

**Question 15**

The sum of all the positive factors of 30 is

- A. 41 B. 55 C. 59 D. 61 E. 72

**Question 16**

Michael went from his house to Melissa's house. He did  $\frac{1}{3}$  of the distance by train,  $\frac{3}{4}$  of the remaining distance by bus and the final part on foot. What fraction of the total distance did Michael walk?

- A.  $\frac{1}{6}$  B.  $\frac{1}{5}$  C.  $\frac{2}{5}$  D.  $\frac{2}{3}$  E. Already there.

**Question 17**

What is the next number in the sequence?

16, 25, 36, 49, \_\_\_

- A. 55 B. 56 C. 64 D. 65 E. 81

**Question 18**

$A$ ,  $B$ ,  $C$  and  $D$  are all natural numbers.

We know that  $A \times B = 21$ ,  $B \times C = 35$  and  $C \times D = 60$ .

What is the value of  $D \times A$ ?

- A. 15 B. 35 C. 36 D. 46 E. 84

**Question 19**

A lotto draw is done with only 10 numbers and two draws. (The first winning number is not replaced for the second draw)

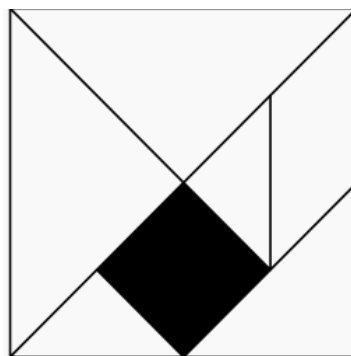
If you had to guess the the two numbers drawn, what is the probability of winning?

- A.  $\frac{1}{100}$  B.  $\frac{1}{90}$  C.  $\frac{1}{45}$  D.  $\frac{2}{19}$  E.  $\frac{1}{5}$

**Question 20**

For  $c = 7$ , which of the following is the smallest?

- A.  $\frac{6}{c}$  B.  $\frac{6}{(c+1)}$  C.  $\frac{6}{(c-1)}$  D.  $\frac{c}{6}$  E.  $\frac{(c+1)}{6}$



**Question 21**

$$100 \times 19.98 \times 1.998 \times 1000 =$$

- A.  $(0.1998)^2$  B.  $(1.998)^2$  C.  $(19.98)^2$  D.  $(199.8)^2$  E.  $(1998)^2$

**Question 22**

A paddling pool is filled with 2000 litres of water at the beginning of summer. However, for the first month no one uses the pool and the evaporates at the rate of 5 litres per day. How many litres of water are left in the paddling pool after 30 days if no water is added?

- A. 1750 B. 1850 C. 1950 D. 1970 E. 1995

**Question 23**

Auckland houses prices are said to be increasing by 30% each year. If this trend continues at the same rate, how many years would it take for a house purchased for \$800,000 to be worth more than \$2,000,000?

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

**Question 24**

What is the ratio of the shaded square to the large square?

- A.  $1/4$  B.  $1/7$  C.  $1/8$  D.  $1/12$  E.  $1/16$

**Question 25**

A  $4 \times 4 \times 4$  cubical open top box contains 64 identical cubes. How many of the small cubes touch a side or the bottom of the box?



- A. 48 B. 52 C. 56 D. 64 E. 80

**Question 26**

$$1/10 + 9/100 + 9/1000 + 7/10000 =$$

- A. 0.0026   B. 0.0197   C. 0.1997   D. 0.26   E. 1.997

**Question 27**

Julie is preparing a speech for her class. Her speech must be between one half hour and three-quarters of an hour in length. The ideal rate of speech is 150 words per minute. If Julie speaks at the ideal rate, which of the following number of words would be an appropriate length for her speech?

- A. 2250   B. 3000   C. 4200   D. 4350   E. 5650

**Question 28**

In the number 74982.1035, the value of the place occupied by the digit 9 is how many times as great as the value of the place occupied by the digit 3?

- A. 1,000   B. 10,000   C. 100,000   D. 1,000,000   E. 10,000,000

**Question 29**

Walter gets up at 6:30 am, catches the school bus at 7:30 am, has six classes that last 50 minutes each, has 30 minutes for lunch, and has 2 hours additional time at school. He takes the bus home and arrives at 4.00pm. How many minutes long does the bus trip to school take?

- A. 30   B. 40   C. 45   D. 60   E. 80

**Question 30**

What fraction of the square is shaded?  
Stripes are equal in width.

- A. 5/12   B. 1/2   C. 7/12   D. 2/3   E. 5/6