Brainiacs Math Olympiad Preliminary Round Sample Exam Paper 2

Category I – grades 3 and 4

Q1.

Which number, when rounded to the nearest 1,000, gives 8,000?

A. 7,449
B. 8,750
C. 8,499
D. 8,999

Q2.

If you multiply 325 by 40, what is the result?

A. 12,600
B. 13,000
C. 11,000
D. 12,800

Q3.

You have $\frac{1}{2}$ of a chocolate bar, and you share it equally with a friend. How much does each person get?

A. $\frac{1}{2}$
B. $\frac{1}{4}$
C. $\frac{2}{2}$
D. $\frac{2}{3}$

Q4.

You have $\frac{3}{4}$ of a pizza. You eat $\frac{2}{3}$ of the pizza. How much is left?

A. $\frac{1}{2}$
B. $\frac{1}{4}$
C. $\frac{1}{8}$
D. $\frac{1}{12}$

Q5.

Order these fractions from smallest to largest: $\dfrac{2}{3}, \dfrac{3}{5}, \dfrac{1}{2}$.

A. $\dfrac{1}{2} < \dfrac{2}{3} < \dfrac{3}{5}$

B. $\dfrac{2}{3} < \dfrac{3}{5} < \dfrac{1}{2}$

C. $\dfrac{1}{2} < \dfrac{3}{5} < \dfrac{2}{3}$

D. $\dfrac{3}{5} < \dfrac{1}{2} < \dfrac{2}{3}$

Q6.

Ravi wrote down all the prime numbers between 20 and 50 on a piece of paper. Which of the following lists could be what Ravi wrote?

A. 23, 25, 29, 31,37,39,41,43,47
B. 23, 29, 31, 37,41,43,47
C. 21, 27, 35, 39,41,43,49
D. 22, 26, 28, 32,34,36,38,42,44,48

Q7.

Which of the following is divisible by 12?
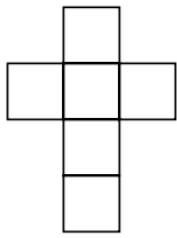
A. 13948572
B. 17387562
C. 17248912
D. 25892342

Q8.

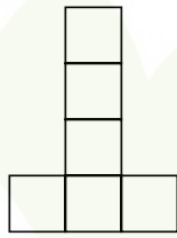If $32\bar{B}48$ is divisible by 6, what is the sum of the possible value(s) of B?
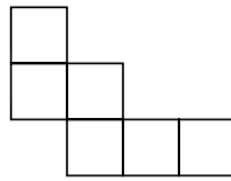
A. 5
B. 8
C. 12
D. 14

Q9.

There are 11 ways to unfold a cube into a flat, two-dimensional shape. A two-dimensional pattern that can be folded into a three-dimensional shape is called a net. One of the nets below cannot be folded into a cube. Which one is it?   ans: C
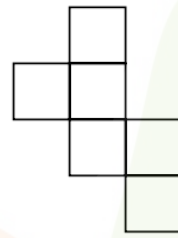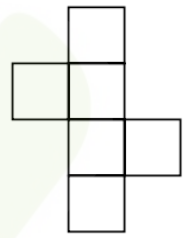
A B C D E
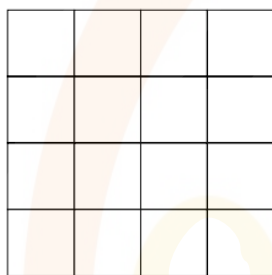
Q10.

How many squares of any size are in the illustration below?
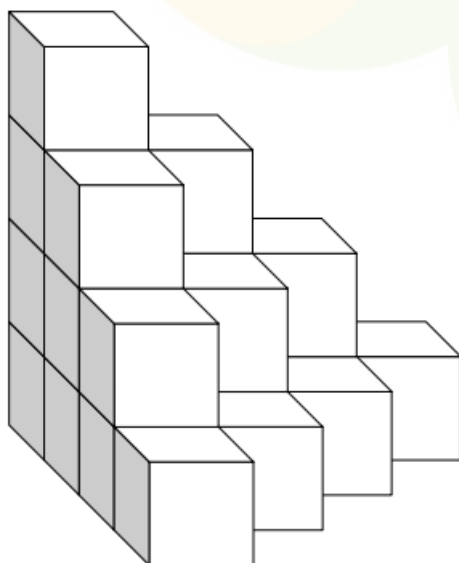
A. 27
B. 28
C. 29
D. 30

Q11.

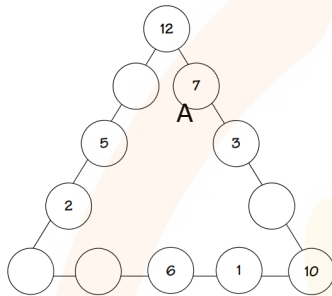How many cubes are in the stack below? All rows and columns finish out their respective row or column —unless you see them end!

A. 18
B. 19
C. 20
D. 21

Q12.

Place the numbers 1–12 in the twelve circles below so the sum of each side of the triangle is 36. What is the value of A. (The numbers may be used once only.)

A. 8
B. 9
C. 11
D. 4

Q13.

The three numbers in each box have a relationship that is the same in all six boxes. Knowing this, can you find the missing number where the question mark is?

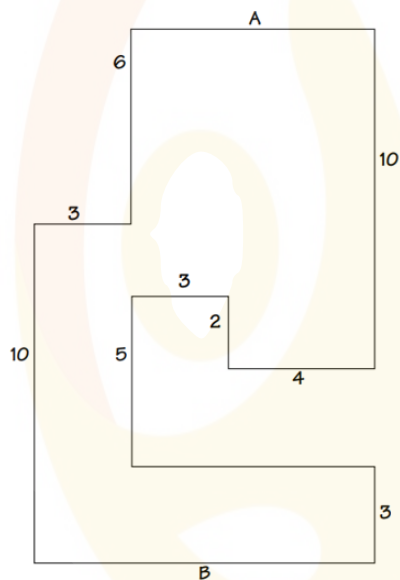| 3		1	5
2	7	6	
4	0		3
		4	5
	8		
10	1	6	2
	1	?	

A. 4
B. 6
C. 8
D. 12

Q14.

A fruit dealer packages pears in two different box sizes. One size holds 5 pears and the other size holds 12 pears. The dealer sold 68 pears in one of the stores in one hour. He said to his assistant, "You don't see that very often. We sold the same number of boxes of each type of packaging." How many boxes of each size did they sell in one hour?

A. 4
B. 5
C. 6
D. 7

Q15.

In the illustration below, all angles are 90°. Look at the measurements given and use them to figure out the answer of the perimeter of the shape.

A. 62
B. 65
C. 67
D. 70

Q16.

Sudoku is a type of math game that many people enjoy. Fill in the grid so that every

row, every column, and every 3×2 box contains the numbers 1 through 6. What is the value of C?

4	5				
1	3	2		6	5
6	C		5	2	
3		5	6		1
	6		3	5	
5	4		2	1	6

A. 1
B. 2
C. 4
D. 5

Q17.

In the addition puzzle of

$$
\begin{array}{r}
AB \\
+AB \\
\hline
CA
\end{array}
$$

A, B, and C are all positive integers, each having a different value. What is the value of the product of the possible values of the letter A? Do not consider the number 1 in this puzzle.

A. 2
B. 4
C. 8
D. 12

Q18.

Here is a puzzle called a Number Cross.

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A   B   C
        D
        E
        F   G   H
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Each of the eight letters is a different number from 1 to 8.

A + B + C= F + G + H = 12. D + E = 12. C + D + E + F = 26.

D = 5. A, B, and C are even numbers. H = 1. What is the value of the letter G?

A. 2
B. 3
C. 6
D. 8

Q19.

Consider the sequence: 5, 7, 11, 13, 17, 19, …

What is the 10th number in this sequence?

A. 21
B. 23
C. 31
D. 50

Q20.

If yesterday was Monday, what day will it be 50 days from now?

A. Monday
B. Tuesday
C. Wednesday
D. Friday