

International Markhor Junior Contest 2023

Pioneer Level(Class VII & VIII)

Mathematics Time Allowed 60

Minutes

There are 19 problems, graded as follows:

Questions 1-5 are 1 point each,

Questions 6-10 are 2 points each,

Questions 11-15 are 3 points each,

Questions 16-19 are 5 points each.

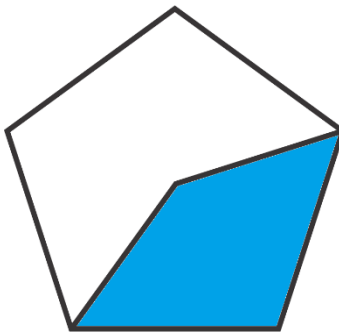
1. Solve the following expression.

$$(30+12) \times 6 - 30 + (12 \times 6)$$

- a) 250
- b) 72
- c) 222
- d) 150

2. The regular Pentagon is colored. How much pentagon is colored?

- a) 20%
- b) 40%
- c) 50%
- d) 30%



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3. A teacher wants to distribute some toffies. She told her students that if she gave 3 toffies to each student 5 toffies would be left over and if she gave 4 toffies to each student she would face a shortage of 5 toffies. How many students does she have?
- a) 6
 - b) 8
 - c) 10
 - d) 15
4. Which of the following polygons has the largest internal angle?
- a) Quadrilateral
 - b) Pentagon
 - c) Hexagon
 - d) Heptagon
5. Iram has 90 ice cream sticks. She builds a triangle and a square, using all the cream sticks. Each side of the triangle consists of 10 cream sticks. How many cream sticks are on each side of the square?
- a) 20
 - b) 15
 - c) 30
 - d) 40



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6. What is the sum of the hidden faces of the dice?

- a) 15
- b) 36
- c) 40
- d) 42

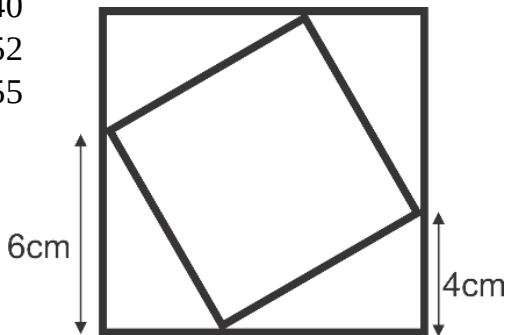


7. The sum of two positive integers is 15 what will be the maximum product?

- a. 56
- b. 54
- c. 64
- d. 50

8. A big square has another square in it as shown in the figure (not to the scale). Find the area of the inner square.

- a) 60
- b) 40
- c) 52
- d) 55



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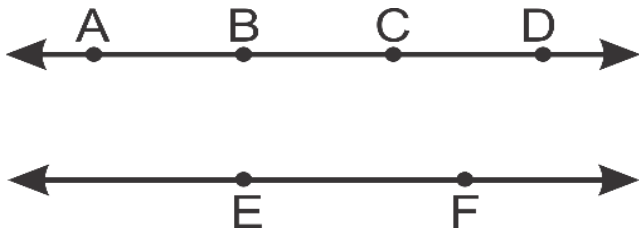
9. If x is a negative integer. Which is the largest?

- a) $-3x$
- b) $7x+5$
- c) $2x+3$
- d) $14x$

10. We currently have 3^2 and desire to raise it to the power of 9^6 . What exponent should we use to achieve this?

- a) 8
- b) 9
- c) 6
- d) 12

11. We have two parallel lines marking points A, B, C D, E, and F. How many triangles with vertices (A, B, C, D, E, and F) can we draw by joining these points?



- a) 10
- b) 12
- c) 20
- d) 16

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12. In a school, there are $\frac{1}{3}$ students studying science subjects and $\frac{2}{3}$ students learning art subjects. After the science gala in school $\frac{1}{4}$ of the art students shifted to science subjects. Now there is

- a) 25% of students are in science subjects
- b) 50% of students are in science subjects
- c) 60% of students are in science subjects
- d) 75 % of students are in science subjects

13. In the first 100 natural numbers, what percentage of them are prime?

- a) 25%
- b) 40%
- c) 20%
- d) 10%

14. If a positive integer has two divisors, and the integer immediately following it has three divisors, how many divisors does the integer two greater than the initial one?

- a) 2
- b) 3
- c) 4
- d) 6

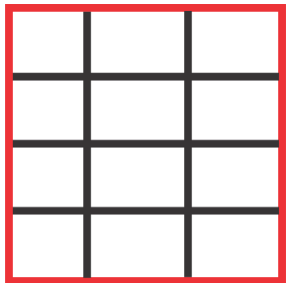
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15. What is the sum of four unique positive integers whose product equals 100?

- a) 15
- b) 18
- c) 16
- d) 17

16. When drawing 5 lines within a box, consisting of 2 vertical and 3 horizontal lines as depicted in the illustration, we create a total of 12 smaller boxes. What is the highest possible count of boxes we can form using 11 lines?

- a) 30
- b) 22
- c) 11
- d) 42



17. How many squares can be counted within the 12th pattern?

- a) 100
- b) 96
- c) 108
- d) 120

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- 18. In a classroom containing 50 students, there are currently two girls. How many boys must depart from the classroom to ensure that the gender distribution consists of exactly 10% girls?**
- a) 40
 - b) 20
 - c) 30
 - d) 10
- 19. Numbers have been listed on the board. Out of these numbers, only 5 are even, and 10 of them are divisible by 17. Fahd removes the largest number among them. What is the smallest possible number that Fahd might have erased?**
- a) 323
 - b) 255
 - c) 170
 - d) 357