

Q1: Evaluate $\left(\frac{\sqrt{0.09}-\sqrt{0.01}}{\sqrt{0.09}+\sqrt{0.01}}\right)(\sqrt{4}\times\sqrt{16})$
 A) 2 B) 3 C) 4 D) 5

Q2: Find the value of h in the equation

$$12\frac{1}{5} = h + 7\frac{4}{5}$$

A) $\frac{19}{5}$ B) $\frac{22}{5}$ C) $\frac{27}{5}$ D) $\frac{33}{5}$

Q3: Age of a father is 42 and his son is 12 years old. After how many years the age of father will be triple of his son

- A) 4 B) 3 C) 2 D) 1

Q4: Evaluate $\frac{0.00a}{0.0a} + \frac{0.bc}{b.c} - \frac{a.bc}{abc}$

- A) 1.9 B) 1.9ab
 C) 0.19 D) 0.19abc

Q5: Which of the following is not a factor of $ax^2 - a^2x - abx + bx^2$

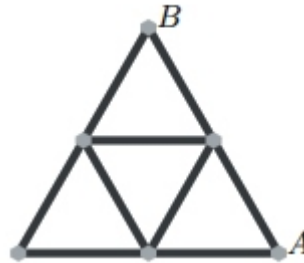
- A) x B) $x-b$ C) $a+b$ D) $x-a$

Q6: Find the multiplicative inverse of a if

$$\frac{\left(1+\frac{1}{2}\right)\times\left(1+\frac{1}{3}\right)\times\left(1+\frac{1}{4}\right)\dots\left(1+\frac{1}{18}\right)}{\left(1-\frac{1}{2}\right)\times\left(1-\frac{1}{3}\right)\times\left(1-\frac{1}{4}\right)\dots\left(1-\frac{1}{8}\right)} = a$$

- A) 76 B) 1/76 C) 1/78 D) 78

Q7: Each of the nine paths in a park is 100 m long. Ali wants to go from A to B without going along any path more than once. What is the length of the longest route she can choose?

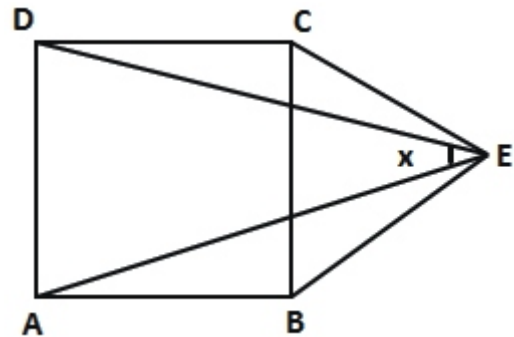


- A) 900m B) 800m
 C) 700m D) 600m

Q8: ISMO2013 ISMO2013.... find the 767th letter or digit in the sequence?

- A) I B) M C) 2 D) 1

Q9: ABCD is a square and ΔBCE is an equilateral triangle. Find ∠x



- A) 15 B) 30 C) 45 D) 60

Q10: Which of the following is always an even number where n is a positive integer?

- A) $7(n+2)$ B) $7(2n+2)$
 C) $7(3n+2)$ D) $7(7n+2)$

Q11: If $3^x = \frac{1}{16}$ and $3^y = 32$ then $\frac{x}{y} = ?$

- A) $\frac{5}{4}$ B) $\frac{1}{5}$ C) $-\frac{4}{5}$ D) $-\frac{5}{4}$

Q12: If Farhan leaves now and drives at 80km/h, he can be in Lahore in time for his appointment. On the other hand, if he eats first and leaves in half an hour, he will have to drive at 100 km/h to make his appointment. How far is he to Lahore?

- A) 100km B) 200km
C) 250km D) 150km

Q13: Evaluate $\left(1 - \frac{1}{3} - \frac{1}{1 + \frac{1}{2}}\right) \div \left(\frac{1 - \frac{1}{2}}{3 - \frac{1}{1 + \frac{1}{4}}}\right)$

A) 0 B) 1 C) $\frac{3}{4}$ D) $\frac{4}{3}$

Q14: I think of a number, subtract 7 from it, divide the result by 4, and then add 13. If this gives a final result of 20, find the original number

- A) 31 B) 33 C) 35 D) 37

Q15: A water tank can be filled by one pipe in 10 hours and it can be emptied by another pipe in 15 hours. If both pipes are open, how long will it take to fill the tank?

- A) 30 B) 20 C) 40 D) 45

Q16: Evaluate $\left(2\frac{1}{4}\right)^{-1} \cdot \left(\frac{1}{1 + \frac{1}{3}} + \frac{1}{1 - \frac{1}{3}}\right)$

- A) 4 B) 3 C) 2 D) 1

Q17: If $1+2+3 = \frac{3 \times 4}{2}$ and $1+2+3+4+5 = \frac{5 \times 6}{2}$

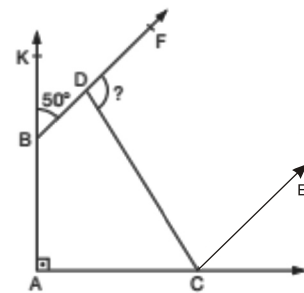
then, $1+2+3+\dots\dots\dots+n = ?$

- A) $n(n+1)$ B) $\frac{n(n+1)}{2}$
C) $2n(n+1)$ D) $n(2n+1)$

Q18: If $-12 < n+4 < 24$, then find the maximum and minimum value of n? (n is an integer)

- A) 19 and -15 B) 20 and -16
C) 19 and -16 D) 21 and -15

Q19: If $[AK \perp [AC, [BF \parallel [CE$ and $m\angle(ACD) = m\angle(DCE), m\angle(FBK) = 50^\circ$ then,



$m\angle(FDC) = ?$

- A) 110° B) 120° C) 130° D) 140°

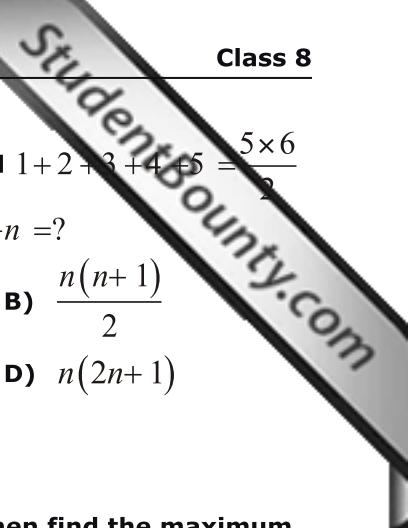
Q20: Evaluate $1-3+5-7+9-11+\dots\dots\dots+49 = ?$

- A) -25 B) -24 C) 24 D) 25

Q21: If $\frac{\sqrt{7}-8}{\sqrt{5}-2} = a$ then, which of the followings

is the result of $\frac{\sqrt{7}+8}{\sqrt{5}+2}$ in terms of a

- A) $\frac{7}{a}$ B) $\frac{8}{a}$ C) $\frac{-49}{a}$ D) $\frac{-57}{a}$



Q22: Sibtain evaluates

$$\left(\frac{1}{x^2+y} + \frac{1}{x^2-y}\right) \cdot \frac{x^2y^2 - y^3}{2xy} \text{ for } x = \frac{1}{5} \text{ and } y = \frac{1}{7}$$

Which of the following expressions has the same

value when $x = \frac{1}{5}$ and $y = \frac{1}{7}$

- A) $\frac{xy}{x^2+y}$ B) $\frac{x}{x^2-y}$
 C) $\frac{y}{x+y}$ D) $\frac{2xy}{x-y}$

Q23: Information: The numbers which can be written as the sum of the integers from 1 to n for $n=1,2,3,4,\dots$ are called triangular numbers.

Example: $1+2+3=6$ or $1+2+3+4+5=15$

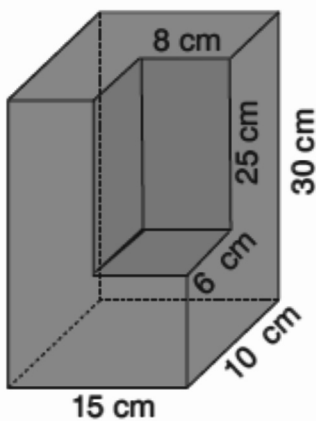
The numbers which are squares of natural numbers are called perfect squares.

Example: 36 is square of 6

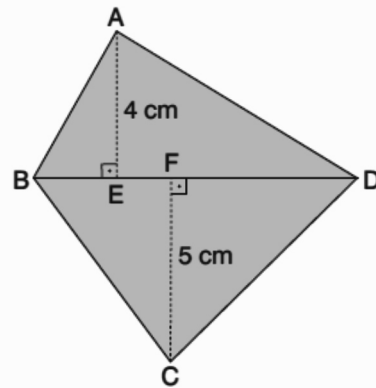
Which of the following numbers is neither a triangular nor a perfect square?

- A) 171 B) 300 C) 289 D) 255

Q24: In the figure, a rectangular prism has been removed from a larger prism with dimensions 15 cm, 10 cm and 30 cm. Find the volume of the remaining solid in cubic centimeters

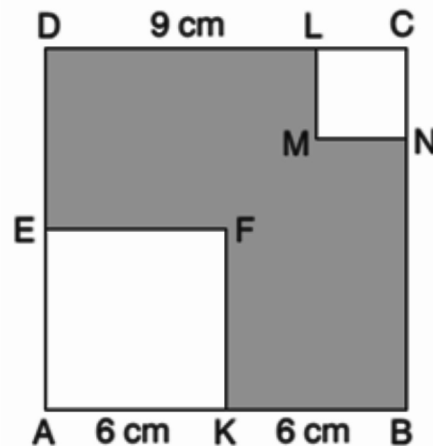


Q25: Find the area of given figure, if BD is 12 cm



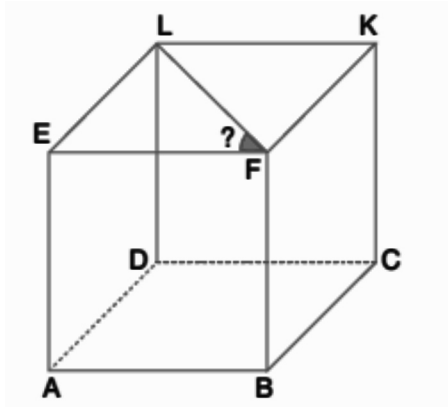
- A) 20cm^2 B) 64cm^2
 C) 54cm^2 D) 56cm^2

Q26: In the figure, ABCD, AKFE and LMNC are squares. Find the area of the shaded region



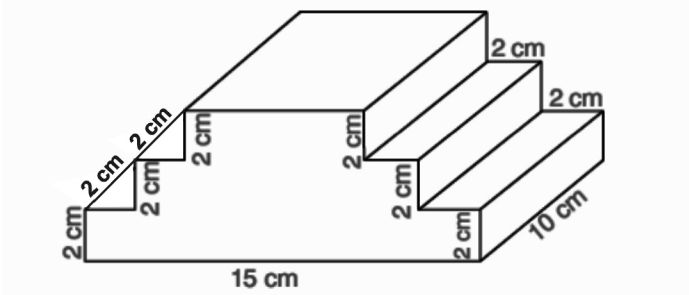
- A) 104cm^2 B) 99cm^2
 C) 78cm^2 D) 86cm^2

Q27: The figure shows a cube. What is the measure of angle EFL?



- A) 30° B) 45° C) 60° D) 75°

Q28: Find the volume in cubic centimeters of the solid with the given dimensions.

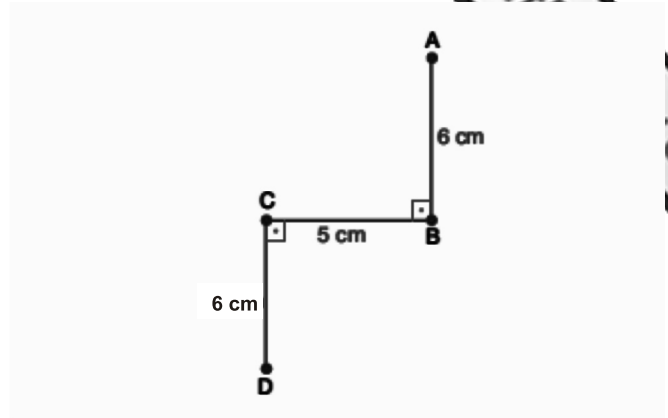


- A) 660cm³ B) 680cm³
 C) 700cm³ D) 720cm³

Q29 What is the measurement of the angle between the hour-hand and the minute-hand at the time 05:20?

- A) 36° B) 40° C) 44° D) 48°

Q30: Find the distance between A and D



- A) 2cm B) 13 cm
 C) 14 cm D) 15 cm

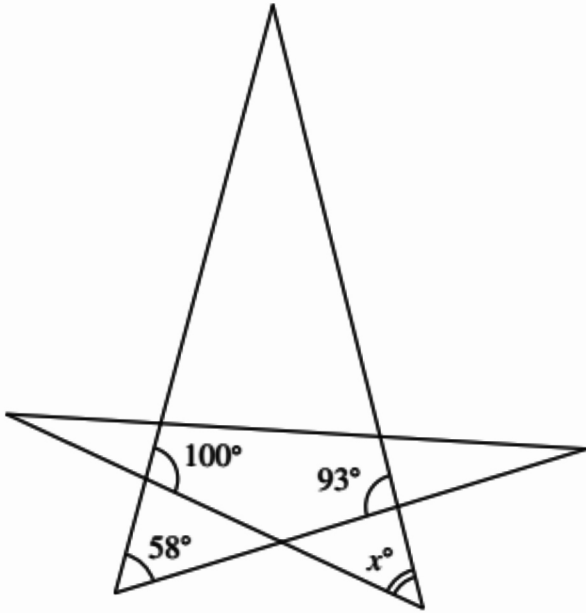
Q31: Simplify $\frac{2\left(1+\frac{1}{a}\right)}{1-\frac{1}{b}} \cdot \frac{b-1}{a+1} + 1$

- A) $\frac{2b}{a} - 1$ B) $\frac{2b}{a}$ C) $1 + \frac{2b}{a}$ D) $\frac{a}{b}$

Q32: There are two different ways from the city A, to the city B. There are 3 different ways from the city B, to the city C. There are two different ways from the city A to the city C that are not passing through the city B. How many different ways are there from the city A to the city C?

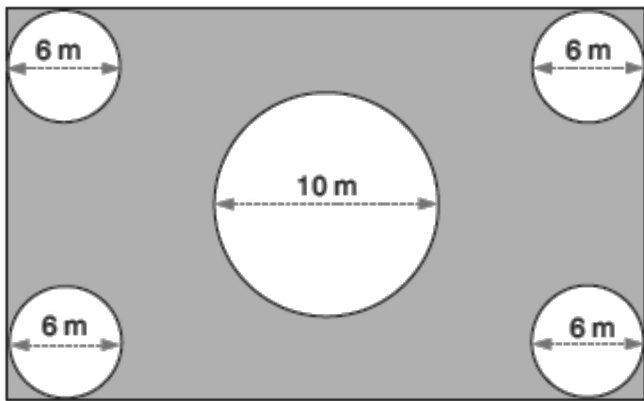
- A) 6 B) 8 C) 10 D) 12

Q33: In the given figure, what is the value of angle x°



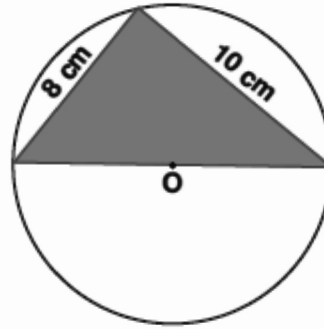
- A) 49° B) 51° C) 41° D) 47°

Q34: The figure below shows 5 circular pools in a rectangular garden. The diameters of the circles are 6 m and 10 m and the side lengths of the garden are 20 m and 30 m. The rest of the garden is covered in grass. How much of the garden is covered in grass? ($\pi=3$)



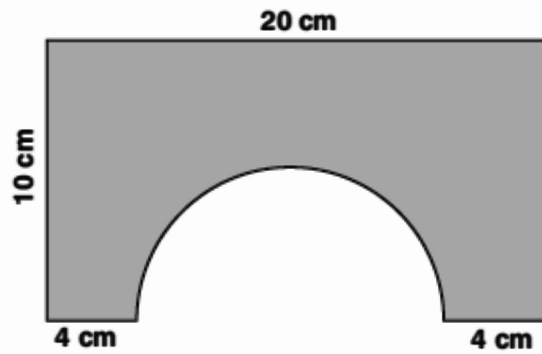
- A) $417m^2$ B) $415m^2$
 C) $413m^2$ D) $411m^2$

Q35: In the figure, O is the center of the circle. Find the area of the shaded region



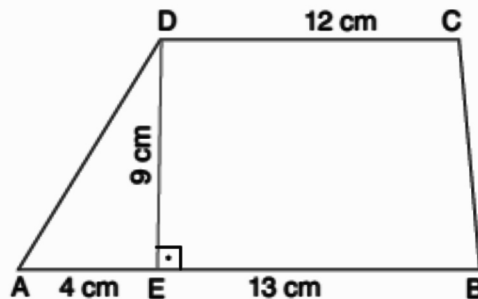
- A) $20cm^2$ B) $40cm^2$
 C) $60cm^2$ D) $80cm^2$

Q36: Find the perimeter of the shaded region ($\pi=3$)



- A) 66cm B) 72cm
 C) 78cm D) 80cm

Q37: Find the area of trapezoid



- A) $130 cm^2$ B) $130.5 cm^2$
 C) $127 cm^2$ D) $175 cm^2$

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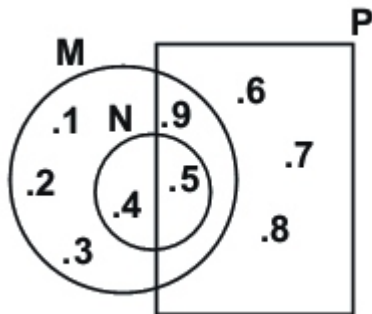
Q38: A gas station gives a 20% discount on gasoline. The next month it gives another 20% discount on the new price. Find the total percentage of discount on the original price

- A) 36% B) 42% C) 64% D) 66%

Q39: In a school referendum 10% of teachers and 98% of students say "YES". All the students and teachers participate in the referendum. Referendum results as 90% "YES". Find the ratio of the number of students to the number of the teachers.

- A) 10 B) 12 C) 15 D) 18

Q40: What is $M \setminus (P \cap N) = ?$



- A) {1,2,3} B) {1,2,3,4}
 C) {1,2,3,4,9} D) {1,2,3,4,6,7,8,9}

Q41: One of the students asks the age of Khwarizmi. His answer is : "When I was at your age you were 12 years old and when you are at my age, I will be 66 years old." Accordingly, what is the student's current age?

- A) 18 B) 24 C) 30 D) 36

Q42: A regular hexagon is divided into 6 equilateral triangles. If one side of the hexagon is 6 cm what is the total perimeter of triangles?

- A) 36 cm B) 72 cm
 C) 108 cm D) 144 cm

Q43: $-2[3+5(-2-3)]-4(10-3)-(3-10)=?$

- A) -17 B) 1 C) 12 D) 23

Q44: $\left(1+\frac{1}{4}\right) \times \left(1-\frac{1}{5}\right) \times \left(1+\frac{1}{6}\right) \times \left(1-\frac{1}{7}\right) \dots \times \left(1+\frac{1}{99}\right) \times \left(1-\frac{1}{100}\right) = ?$

- A) $\frac{1}{100^2}$ B) $\frac{1}{10^2}$ C) $\frac{1}{10^1}$ D) $\frac{1}{10^0}$

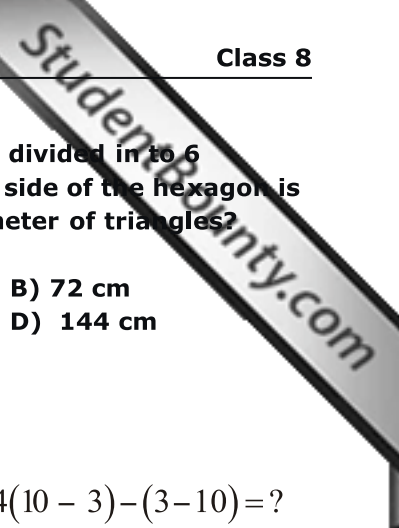
Q45: Onder, Taner and Serhat are planning to go to a trip. They share the cost of the trip in the ratio 4:5:6 respectively. If half of Serhat's share is 600 Rs, how much less is Onder going to pay than Taner?

- A) Rs. 100 B) Rs. 200
 C) Rs. 300 D) Rs. 400

Q46: If $a = \frac{1}{0.03}$ and $b = \frac{1}{0.07}$ then, evaluate

$$\frac{1}{a} + \frac{1}{b}$$

- A) 0.4 B) 0.3 C) 0.2 D) 0.1

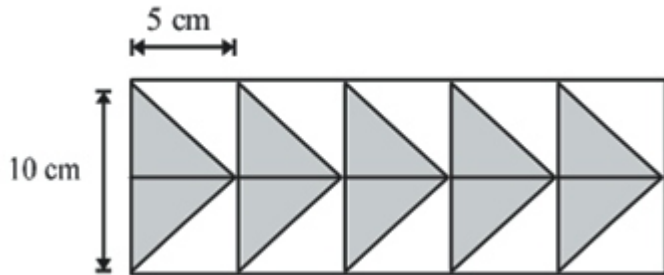


Q47: If the numbers in the figure are ordered with a rule then which number will come in place of question mark?

10	
8	13
16	6
4	19
22	?

- A) 2 B) 5 C) 8 D) 11

Q48: During an art lesson, Mudessir created a repeated pattern on a piece of paper as shown below, The area of the shaded part is



- A) 152cm² B) 125cm²
 C) 251cm² D) 521cm²

Q49: $x + y = \frac{3}{4}$, $xy = \frac{1}{4}$ and $\frac{1}{x} + \frac{1}{y} = a$ then, what

is the value of a

- A) 1 B) 2 C) 3 D) 4

Q50: If $\left. \begin{aligned} \frac{3}{a} + \frac{3}{b} &= 1 \\ \frac{3}{a} + \frac{3}{c} &= \frac{15}{8} \\ \frac{3}{b} + \frac{3}{c} &= \frac{9}{8} \end{aligned} \right\}$ then, find the value of

- $\frac{1}{a} + \frac{1}{b} + \frac{1}{c}$
- A) $\frac{1}{3}$ B) $\frac{2}{3}$ C) $\frac{3}{3}$ D) $\frac{4}{3}$

