Q1: Evaluate $\left(\dfrac{\sqrt{0.09} - \sqrt{0.01}}{\sqrt{0.09} + \sqrt{0.01}} \right)\left(\sqrt{4} \times \sqrt{16} \right)$

A) 2   B) 3   √C) 4   D) 5

Solution:

$$\left(\frac{0.3 - 0.1}{0.3 + 0.1} \right)(2 \times 4) = \frac{0.2}{0.4} \times 8 = \frac{1}{2} \times 8 = 4$$

Answer: C

Q2: Find the value of h in the equation

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

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

Solution:

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

$$h = \frac{61 - 39}{5} = \frac{22}{5}$$

Answer: B

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

Solution:

$$3(x + 12) = 42 + x \Rightarrow 3x + 36 = 42 + x \Rightarrow$$

$$3x - x = 42 - 36 \Rightarrow 2x = 6 \Rightarrow x = 3$$

Answer: B

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

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

Solution:

$$\frac{0.00a}{0.0a} + \frac{0.bc}{b.c} - \frac{a.bc}{abc} = \frac{\cancel{a}}{10\cancel{a}} + \frac{\cancel{bc}}{10\cancel{bc}} - \frac{\cancel{abc}}{100\cancel{abc}}$$

$$\frac{1}{10} + \frac{1}{10} - \frac{1}{100} = 0.1 + 0.1 - 0.01 = 0.2 - 0.01 = 0.19$$

Answer: C

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) $x - a$

Solution:

$$ax^2 - a^2x - abx + bx^2 = ax(x - a) + bx(x - a)$$

$$x(x - a)(a + b) \quad then \quad answer: \ (x - b)$$

Answer: B

We believe what is taught with love lasts forever

Q6: Find the multiplicative inverse of a if

$$\frac{\left(1+\frac{1}{2}\right)\cdot\left(1+\frac{1}{3}\right)\cdot\left(1+\frac{1}{4}\right)\ldots\left(1+\frac{1}{18}\right)}{\left(1-\frac{1}{2}\right)\cdot\left(1-\frac{1}{3}\right)\cdot\left(1-\frac{1}{4}\right)\ldots\left(1-\frac{1}{8}\right)}=a$$
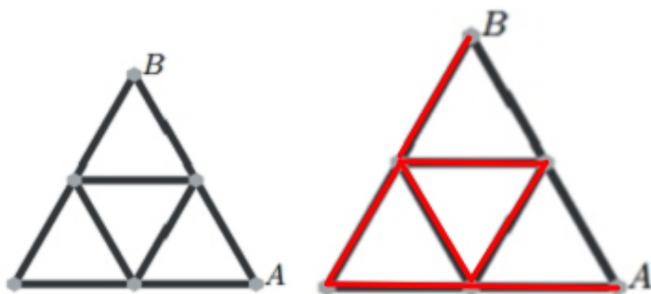
A) 76   √B) 1/76   C) 1/78   D) 78

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

Solution: $\dfrac{\dfrac{\cancel{3}}{2}\cdot\dfrac{\cancel{4}}{\cancel{3}}\cdot\dfrac{\cancel{5}}{\cancel{4}}\ldots\dfrac{19}{\cancel{18}}}{\dfrac{1}{\cancel{2}}\cdot\dfrac{\cancel{2}}{\cancel{3}}\cdot\dfrac{\cancel{3}}{\cancel{4}}\ldots\dfrac{\cancel{7}}{8}}=\dfrac{19}{\cancel{2}}\cdot\dfrac{\cancel{8}^4}{1}=19\times4=76=a$

$$\frac{1}{a}=\frac{1}{76}$$

Answer: B

Q7: Each of the nine paths in a park is 100 m long. Ann 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

Solution:

Answer: C

Q8: ISMO2013ISMO2013ISMO2013................. find the 767th letter or digit in the sequence?

A) I   B) M   C) 2   √D) 1

Solution: $8\overline{)767}$ and 7th term is 1.

$$
\begin{array}{r}
95 \\
8\overline{)767} \\
72 \\
\hline
047 \\
-40 \\
\hline
\times\times7
\end{array}
$$

Answer: D

Q9: $ABCD$ is a square and ΔBCE is an equilateral triangle. Find x^0
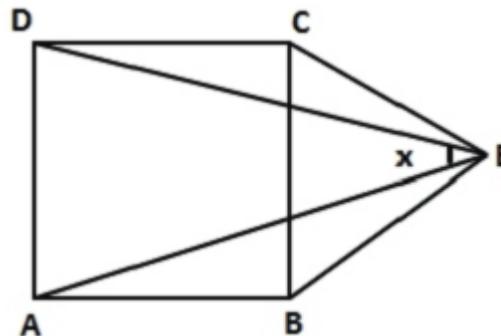
A) 15   √B) 30   C) 45   D) 60

Solution:

Answer: B

We believe what is taught with love lasts forever

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

A) 7(n+2)   √B) 7(2n+2)
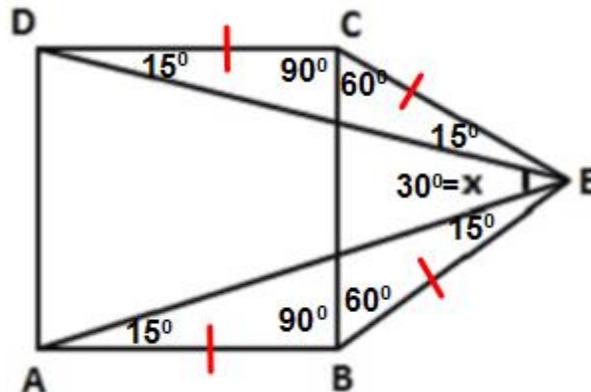C) 7(3n+2)   D) 7(7n+2)

Solution: $7(2n+2) = 7 \times 2 \times (n+1) = 14(n+1)$

<div align="right">**Answer: B**</div>

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

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

$$3^x = \frac{1}{16} \Rightarrow 3 = \left(\frac{1}{16}\right)^{\frac{1}{x}} = 16^{-\frac{1}{x}} \Rightarrow$$

Solution: $3^y = 32 \Rightarrow \left(16^{-\frac{1}{x}}\right)^y = 32 \Rightarrow 2^{\frac{-4y}{x}} = 2^5$

$$\frac{-4y}{x} = 5 \Rightarrow -\frac{4}{5} = \frac{x}{y}$$

<div align="right">**Answer: C**</div>

Q12: If Farhan leaves now and drive 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

Solution:

$$d = 80t = 100(t - 0.5) \Rightarrow 80t = 100t - 50 \Rightarrow$$

$$100t - 80t = 50 \Rightarrow 20t = 50 \Rightarrow t = \frac{50}{20} = 2.5 hrs$$

$$d = 80t = 80 \times 2.5 = 200km$$

<div align="right">**Answer: B**</div>

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

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

Solution:

$$\left(1 - \frac{1}{3} - \frac{1}{1+\frac{1}{2}}\right) \div \left(\frac{1 - \frac{1}{1+\frac{1}{2}}}{3 - \frac{1}{1+\frac{1}{4}}}\right) = \left(1 - \frac{1}{3} - \frac{2}{3}\right) \div \left(\frac{1 - \frac{2}{3}}{3 - \frac{4}{5}}\right)$$

$$\left(\frac{3-1-2}{3}\right) \div \left(\frac{\frac{1}{3}}{\frac{11}{5}}\right) = 0 \div \frac{5}{33} = 0$$

<div align="right">**Answer: A**</div>

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

$$\frac{x-7}{4} + 13 = 20 \Rightarrow \frac{x-7}{4} = 7 \Rightarrow$$

Solution:

$$x - 7 = 28 \Rightarrow x = 35$$

<div align="right">**Answer: C**</div>

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

Solution: $\dfrac{1}{10} - \dfrac{1}{15} = \dfrac{3-2}{30} = \dfrac{1}{30} \Rightarrow 30 hrs$

<div align="right">**Answer: A**</div>

<div align="center">**We believe what is taught with love lasts forever**</div>

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

A) 4　　　　　**B) 3**　　　　　**C) 2**　　　　**√D) 1**

Solution:

$$\left(2\dfrac{1}{4}\right)^{-1}\cdot\left(\dfrac{1}{1+\dfrac{1}{3}}+\dfrac{1}{1-\dfrac{1}{3}}\right)=\left(\dfrac{9}{4}\right)^{-1}\cdot\left(\dfrac{1}{\dfrac{4}{3}}+\dfrac{1}{\dfrac{2}{3}}\right)$$

$$\dfrac{4}{9}\cdot\left(\dfrac{3}{4}+\dfrac{3}{2}\right)=\dfrac{4}{9}\cdot\dfrac{9}{4}=1$$

Answer: D

Q17: If $1+2+3=\dfrac{3\times4}{2}$ and $1+2+3+4+5=\dfrac{5\times6}{2}$

the, $1+2+3+\ldots\ldots\ldots\ldots+n=?$

A) $n(n+1)$　　　　　　　**√B)** $\dfrac{n(n+1)}{2}$

C) $2n(n+1)$　　　　　　**D)** $n(2n+1)$

Solution: $1+2+3+\ldots\ldots\ldots\ldots+n=\dfrac{n(n+1)}{2}$

Answer: B

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**

$$-12<n+4<24\Rightarrow$$

Solution: $-12<n+4\Rightarrow-16<n\Rightarrow\min n=-15$

$$n+4<24\Rightarrow n<20\Rightarrow\max n=19$$

Answer: A

Q19: If $[AK\perp[AC,[BF\,//[CE$ and $m\angle(ACD)=m\angle(DCE),m\angle(FKB)=50^{0}$ then,

$m\angle(FDC)=?$

√A) 110^{0}　　　**B)** 120^{0}　　　**C)** 130^{0}　　　**D)** 140^{0}

Solution:

180-70=110⁰

x+130+90+x=360
2x+220=360
2x=140
x=70
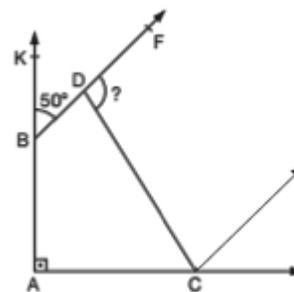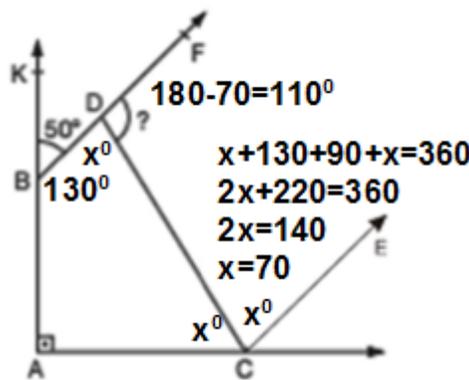
Answer: A

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

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

Solution:

$$1-3+5-7+9-11\ldots\ldots\ldots\ldots+49=?$$

$$-2-2-2\ldots\ldots\ldots-2+49=$$

$$-2\times12+49=-24+49=25$$

Answer: D

We believe what is taught with love lasts forever

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

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

A) $\dfrac{7}{a}$ **B)** $\dfrac{8}{a}$ **C)** $\dfrac{-49}{a}$ **√D)** $\dfrac{-57}{a}$

Solution:

$$\frac{\sqrt{7}-8}{\sqrt{7}-8}\times\frac{\sqrt{7}+8}{\sqrt{5}+2}\times\frac{\sqrt{5}-2}{\sqrt{5}-2}=\frac{7-64}{\sqrt{7}-8}\times\frac{\sqrt{5}-2}{5-4}$$

$$\frac{-57}{1}\times\frac{\sqrt{5}-2}{\sqrt{7}-8}=-57\times\frac{1}{a}=\frac{-57}{a}$$

<div align="right">

Answer: D

</div>

Q22: Sibtain evaluates

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

Which of the following expressions has the same

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

√A) $\dfrac{xy}{x^2+y}$ **B)** $\dfrac{x}{x^2-y}$

C) $\dfrac{y}{x+y}$ **D)** $\dfrac{2xy}{x-y}$

Solution:

$$\left(\frac{1}{x^2+y}+\frac{1}{x^2-y}\right).\frac{x^2y^2-y^3}{2xy}=\frac{x^2-y+x^2+y}{x^4-y^2}\cdot\frac{y^2\left(x^2-y\right)}{2xy}$$

$$\frac{2x^2}{\left(x^2+y\right)\left(x^2-y\right)}\times\frac{y^2\left(x^2-y\right)}{2xy}=\frac{xy}{x^2+y}$$

<div align="right">

Answer: A

</div>

Q23: Information: The numbers which can be written as the sum of the integers from 1 to n for n=1,2,3,4,... 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.
Which of the following numbers is neither a triangular nor a perfect square?

Example: 36 is square of 6

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

Solution:

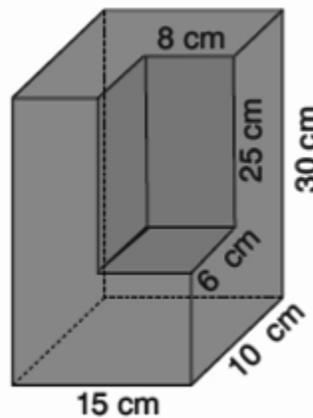**A)** $171=\dfrac{18\times19}{2}$ **B)** $300=\dfrac{24\times25}{2}$

C) $289=17^2$ **√D)** 255

<div align="right">

Answer: D

</div>

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 valume of the remaining solid in cubic centimeters
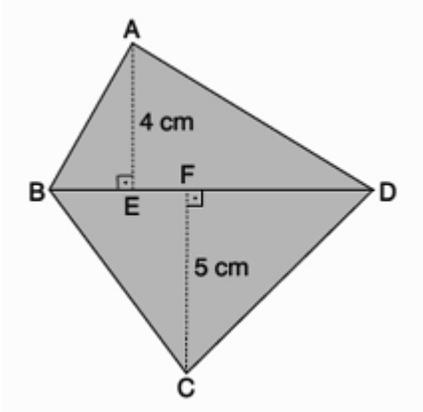

A) 3400 **B)** 3350 **√C)** 3300 **D)** 3250

Solution:

$$15\times10\times30-8\times6\times25=$$

$$=4500-1200$$

<div align="right">

Answer: C

</div>

$$=3300cm^3$$

We believe what is taught with love lasts forever

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

A) 20 cm²   B) 64cm²

√C) 54cm²   D) 56cm²

Solution:

$$Area \quad of \quad \overset{\Delta}{ABD} = \frac{\overset{2}{\cancel{4}} \times 12}{\cancel{2}} = 24cm^2,$$

$$Area \quad of \quad \overset{\Delta}{BDC} = \frac{5 \times \overset{6}{\cancel{12}}}{\cancel{2}} = 30cm^2,$$

$$total \quad area \quad = 24cm^2 + 30cm^2 = 54cm^2,$$

Answer: C

Q26:   In the figure, ABCD, AKFE and LMNC are squares. Find the area of the shaded region
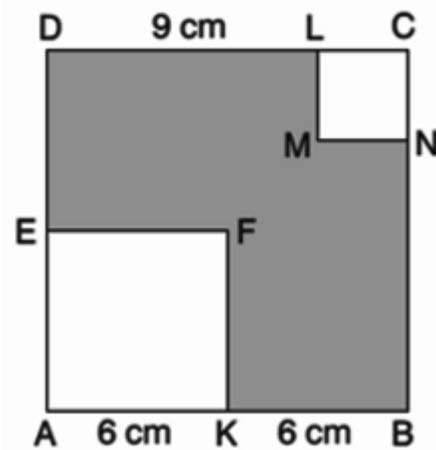
A) 104cm²   √B) 99cm²   C) 78cm²   D) 86cm²

Solution:

$$Area \quad of \quad ABCD = 12 \times 12 = 144cm^2,$$

$$Area \quad of \quad AKFE = 6 \times 6 = 36cm^2,$$

$$Area \quad of \quad LMNC = 3 \times 3 = 9cm^2,$$

$$shaded \quad area \quad = 144 - 36 - 9 = 99cm^2,$$

Answer: B

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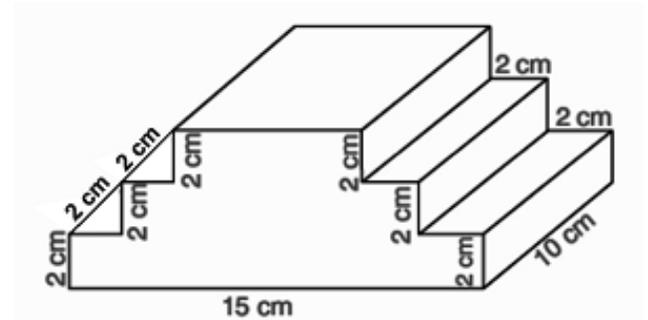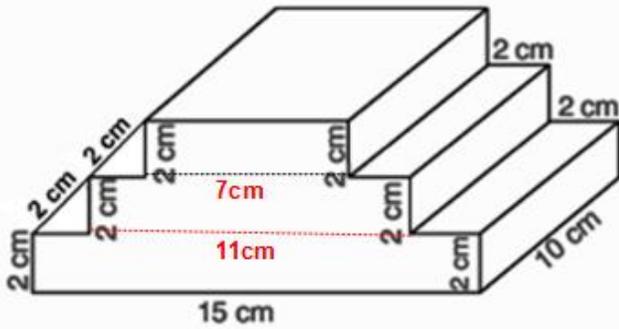

A) 30⁰   √B) 45⁰   C) 60⁰   D) 75⁰
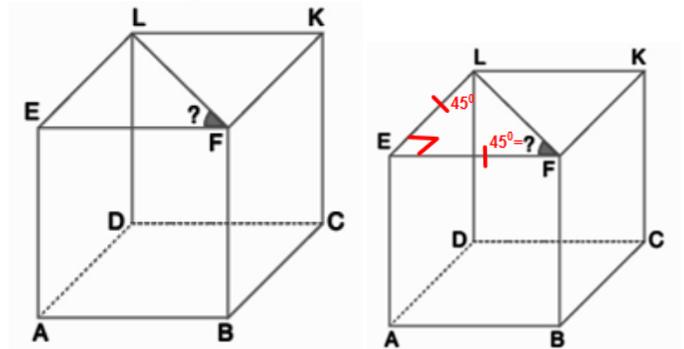
Solution:

Answer: B

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

We believe what is taught with love lasts forever

√**A) 660cm³**   **B) 680cm³**
C) 700cm³   **D) 720cm³**

Solution:

$$V = 15 \times 2 \times 10 + 11 \times 2 \times 10 + 7 \times 2 \times 10$$

$$= (15 + 11 + 7) \times 2 \times 10 = 33 \times 20 = 660 cm^3$$

Answer: A

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

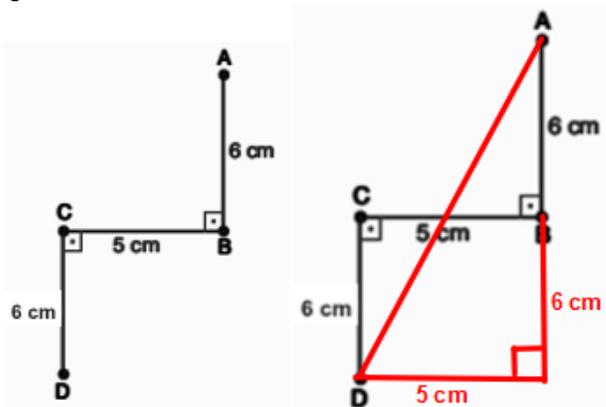**A)** 36^0 √**B)** 40^0 **C)** 44^0 **D)** 48^0

Solution:

Angle between 4 to 5 is 30^0. If every 60 minutes it moves 30^0 then in 20 minutes it will move 10^0. Total makes $30^0 + 10^0 = 40^0$.

Answer: B

Q30:   Find the distance between A and D

A) 2cm   √**B) 13 cm**   **C) 14 cm**   **D) 15 cm**

Solution:

$$AD^2 = 5^2 + 12^2 = 25 + 144 = 169$$

$$AD^2 = 169 \Rightarrow AD = 13 cm$$

Answer: B

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

A) $\dfrac{2b}{a} - 1$ **B)** $\dfrac{2b}{a}$ √**C)** $1 + \dfrac{2b}{a}$ **D)** $\dfrac{a}{b}$

Solution:

$$\frac{2\left(1 + \frac{1}{a}\right)}{1 - \frac{1}{b}} \cdot \frac{b-1}{a+1} + 1 = 2 \times \frac{a+1}{a} \times \frac{b}{b-1} \times \frac{b-1}{a+1} + 1 = \frac{2b}{a} + 1$$

Answer: C

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 cith C?

A) 6   √**B) 8**   **C) 10**   **D) 12**

Solution:
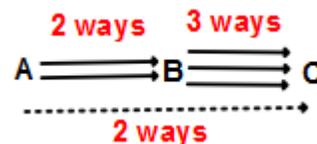
A to C via B: 6 different ways
A to C: 2 different ways
Total A to C: 8 different ways   **Answer: B**

We believe what is taught with love lasts forever

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

A) 49⁰　　　**√B) 51⁰**　　　**C) 41⁰**　　　**D) 47⁰**

Solution:

180-(58+93)=
180-151=29⁰

29⁰

100°　　93°

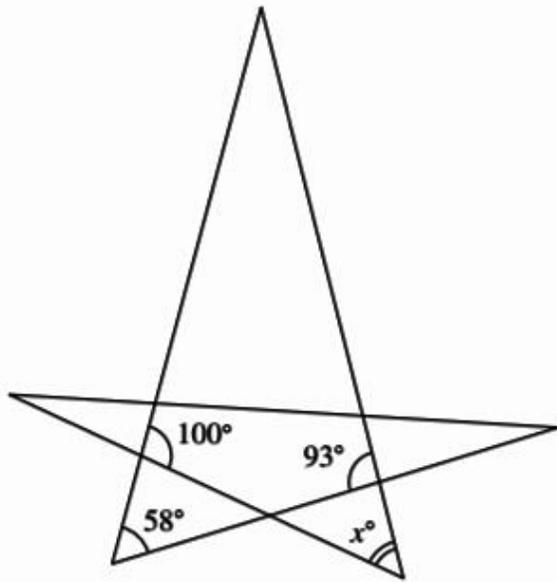58°　　x°

180-(100+29)=x⁰
180-129=51⁰=x⁰
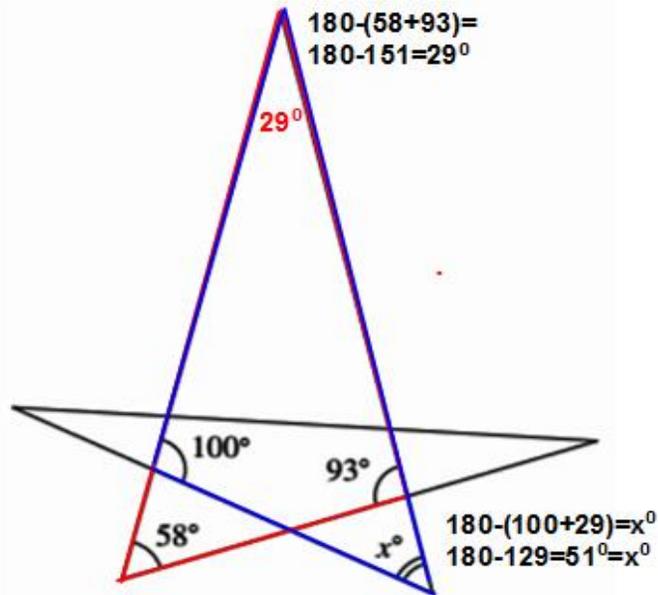
Answer: B

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? $(\pi = 3)$
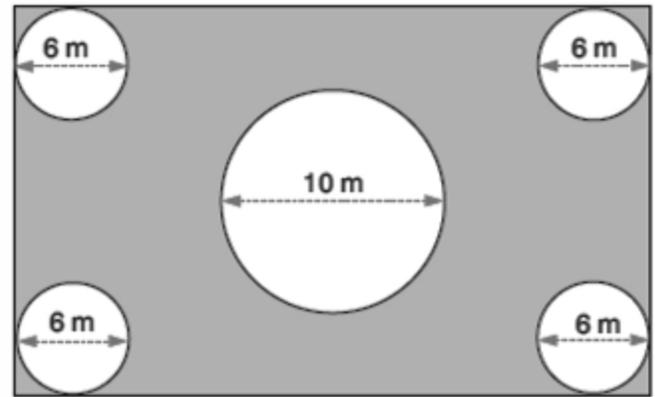
√A) $417m^2$　　　　　　**B)** $415m^2$

C) $413m^2$　　　　　　**D)** $411m^2$

Solution:

Area of Shaded Region=Area of Rectangle-(Area of 4 small circles+Area of 1 big circle)

$$= 20 \times 30 - \left(4 \times 3 \times 3^2 + 3 \times 5^2\right)$$

$$= 600 - \left(108 + 75\right) = 600 - 183 = 417cm^2$$

Answer: A

Q35:　In the figure, O is the center of the circle. Find the area of the shaded region.
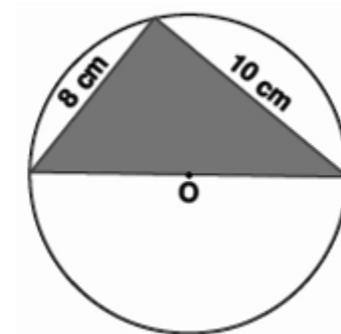
A) $20cm^2$　　　　　　**√B)** $40cm^2$

C) $60cm^2$　　　　　　**D)** $80cm^2$

Solution: Area of triangle(with perpendicular sides)=

$$\frac{8 \times 10}{2} = \frac{80}{2} = 40cm^2$$

Answer: B

We believe what is taught with love lasts forever

Q36: **Find the perimeter of the shaded region**

$(\pi = 3)$
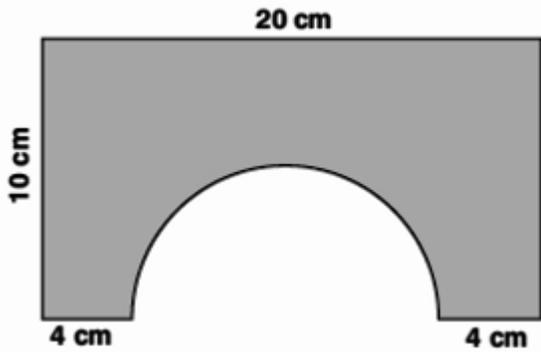
√A) 66cm   B) 72cm

C) 78cm   D) 80cm

Solution:

Perimeter of the shaded region=

$$10 + 10 + 20 + 4 + 4 + \frac{2 \times 3 \times 6}{2} = 48 + 18 = 66cm$$

Answer: A

Q37: **Find the area of trapezoid**
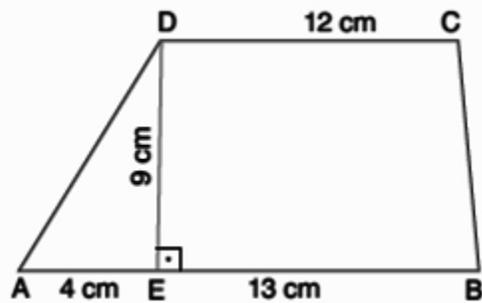
A) 130 cm²   √B) 130.5 cm²
C) 127 cm²   D) 175 cm²

Solution:

Area of trapezium=1/2 Sum of parallel sides **x** height

$$= \frac{(12 + 17) \times 9}{2} = \frac{29 \times 9}{2} = \frac{261}{2} = 130.5cm^2$$

Answer: B

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%

Solution:

$$1st : \frac{80x}{100} \ then \ \frac{80x}{100} \times \frac{80}{100} = \frac{64x}{100} \Rightarrow$$

$36\% \ discount$

Answer: A

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

Solution:

$Let \quad Teachers : x \quad and \quad Students : y \quad be$

$$\frac{\frac{10x}{100} + \frac{98y}{100}}{x + y} = \frac{90}{100} \Rightarrow 10x + 98y = 90x + 90y \Rightarrow$$

$$8y = 80x \Rightarrow \frac{y}{x} = 10 \Rightarrow y : x = 10 : 1 = 10$$

Answer: A

We believe what is taught with love lasts forever

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}

Solution:

$$M \setminus (P \cap N) = \{1,2,3,4,5,9\} \setminus \{5\} = \{1,2,3,4,9\}$$

Answer: C

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

Solution:

	Past	**Present**	**Future**
Student	12	x-k	x
Khwarizmi	x-k	x	x+k=66

x-k=12+m and x-k+m=x then m=k,

x-k=12+m and x-k=12+k,

x-2k=12 and x+k=66 solutions x=48 and k=18 then

Student's current age=x-k=48-18=30

Answer: C

Q42:   A regular hexagon is divided in to 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

Solution:

Total Perimeter: 18xOne side of a triangle= 18x6=108cm.

Answer: C

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

A) -17   B) 1   C) 12   √D) 23

Solution:

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

$$-2[3+5(-5)]-4(7)-(-7)=$$

$$-2[3-25]-28+7=-2(-22)-21=$$

$$44-21=23$$

Answer: D

We believe what is taught with love lasts forever

Q44:

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

A) $\dfrac{1}{100^2}$ **B)** $\dfrac{1}{10^2}$ **C)** $\dfrac{1}{10^1}$ **√D)** $\dfrac{1}{10^0}$

Solution:

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

$$\frac{\cancel{5}}{\cancel{4}}\times\frac{\cancel{4}}{\cancel{5}}\times\frac{\cancel{7}}{\cancel{6}}\times\frac{\cancel{6}}{\cancel{7}}...\times\frac{\cancel{100}}{\cancel{99}}\times\frac{1}{\cancel{100}}=\frac{1}{10^0}$$

Answer: D

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**

Solution:

Serhat's share: 2x600=Rs.1200, Total share is:

$$Serhat's=\frac{\cancel{6}Total}{15}=\overset{200}{\cancel{1200}}\Rightarrow Total=15\times200=Rs.3000$$

$$Onder's=\frac{4}{\cancel{15}}\times\overset{200}{\cancel{3000}}=Rs.800\Rightarrow$$

$$Taner's=\frac{5}{\cancel{15}}\times\overset{200}{\cancel{3000}}=Rs.1000\Rightarrow$$

$$Taner's-Onder's=1000-800=Rs.200$$

Answer: B

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

A) 0.4   **B) 0.3**   **C) 0.2**   **√D) 0.1**

Solution:

$$\frac{1}{a}+\frac{1}{b}=\frac{1}{\dfrac{1}{0.03}}+\frac{1}{\dfrac{1}{0.07}}=0.03+0.07=0.1$$

Answer: D

Q47: If the numbers in the figure are ordered with a rule then which number will come in place of question mark?
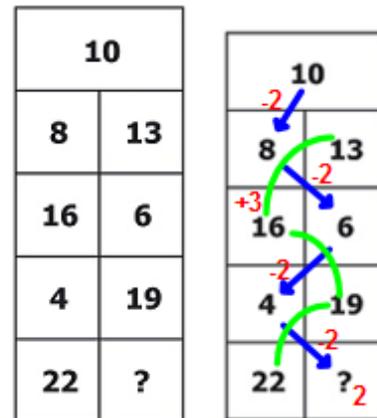
√A) 2   **B) 5**   **C) 8**   **D) 11**

Solution:

Answer: A

We believe what is taught with love lasts forever

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

Solution: Area of 5 triangles:

$$= 5 \times \frac{5 \times \overset{5}{\cancel{10}}}{\cancel{2}} = 5 \times 5 \times 5 = 125 cm^2$$

Answer: B

Q49: $x + y = \dfrac{3}{4}$, $xy = \dfrac{1}{4}$ and $\dfrac{1}{x} + \dfrac{1}{y} = a$ then, what is the value of a

A) 1   B) 2   √C) 3   D) 4

Solution:

$$\frac{1}{x} + \frac{1}{y} = a = \frac{x+y}{xy} = \frac{\frac{3}{4}}{\frac{1}{4}} = \frac{3}{\cancel{4}} \times \frac{\cancel{4}}{1} = 3$$

Answer: C

Q50: If $\left. \begin{array}{c} \dfrac{3}{a} + \dfrac{3}{b} = 1 \\[2mm] \dfrac{3}{a} + \dfrac{3}{c} = \dfrac{15}{8} \\[2mm] \dfrac{3}{b} + \dfrac{3}{c} = \dfrac{9}{8} \end{array} \right\}$ then, find the value of $\dfrac{1}{a} + \dfrac{1}{b} + \dfrac{1}{c}.$

A) $\dfrac{1}{3}$ √B) $\dfrac{2}{3}$ C) $\dfrac{3}{3}$ D) $\dfrac{4}{3}$

Solution:

$$\left. \begin{array}{c} \dfrac{3}{a} + \dfrac{3}{b} = 1 \\[2mm] \dfrac{3}{a} + \dfrac{3}{c} = \dfrac{15}{8} \\[2mm] \dfrac{3}{b} + \dfrac{3}{c} = \dfrac{9}{8} \end{array} \right\} \Rightarrow \frac{6}{a} + \frac{6}{b} + \frac{6}{c} = 1 + \frac{15}{8} + \frac{9}{8}$$

$$6 \left(\frac{1}{a} + \frac{1}{b} + \frac{1}{c} \right) = \frac{8 + 15 + 9}{8} = \frac{32}{8} = 4 \Rightarrow$$

$$\frac{1}{a} + \frac{1}{b} + \frac{1}{c} = \frac{4}{6} = \frac{2}{3}$$

Answer: B

We believe what is taught with love lasts forever