Q1: Evaluate $28-13\times 2-9\div(-3)$

A) 4 **B) 5** **C) 6** **D) 7**

Solution:

$28-13\times 2-9\div(-3)=28-26+3=2+3=5$

Answer: B

Q2: Which of the following is equal to $\frac{8}{14}$?

A) $\frac{2}{52}$ **B)** $\frac{32}{48}$ **C)** $\frac{40}{56}$ **D)** $\frac{20}{35}$

Solution:

$\frac{8}{14}=\frac{4}{7}\Leftrightarrow\frac{20}{35}=\frac{4}{7}$

Answer: D

Q3: What is the maximum number of Mondays in 57 consecutive days?

A) 7 **B) 8** **C) 9** **D) 10**

Solution:

In one week there are 7 days and 56÷7=8 Mondays

for the maximum number of Mondays 8+1=9

Answer: C

Q4: $81-3\times 21+41=?$

A) 53 **B) 59** **C) 63** **D) 71**

Solution:

$81-3\times 21+41=81-63+41=18+41=59$

Answer: B

Q5: Find x if $\frac{x-2}{4}=\frac{1}{2}$

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

Solution:

$\frac{x-2}{4}=\frac{1}{2}\Rightarrow 2(x-2)=4\Rightarrow 2x-4=4$

$\Rightarrow 2x=8\Rightarrow x=4$

Answer: D

Q6: Which of the following fraction shouldn't be in $\frac{7}{3}<\frac{9}{2}<\frac{12}{4}<\frac{7}{2}$ so the order will be correct?

A) $\frac{7}{3}$ **B)** $\frac{9}{2}$ **C)** $\frac{12}{4}$ **D)** $\frac{7}{2}$

Solution:

$\frac{7}{3}<\frac{9}{2}<\frac{12}{4}<\frac{7}{2}=2.3<4.5<3<3.5\Rightarrow$

exclude $\frac{9}{2}=4.5$

Answer: B

Q7: Find the value of $6^1+5^2+4^3+3^4+2^5+1^6$

A) 209 **B) 193** **C) 155** **D) 51**

Solution:

$=6^1+5^2+4^3+3^4+2^5+1^6$

$=6+25+64+81+32+1=209$

Answer: A

Q8: If $x=-\frac{1}{2}$, then evaluate $\frac{x^2+x+1}{x+1}$

A) $-\frac{3}{2}$ **B)** -1 **C)** 1 **D)** $\frac{3}{2}$

Solution:

$$\frac{x^2+x+1}{x+1}=\frac{\left(-\frac{1}{2}\right)^2-\frac{1}{2}+1}{-\frac{1}{2}+1}=\frac{\frac{1}{4}+\frac{1}{2}}{\frac{1}{2}}=\frac{\frac{3}{4}}{\frac{1}{2}}=\frac{3}{\cancel{4}}\times\frac{\cancel{2}}{1}=\frac{3}{2}$$

Answer: D

Q9: a and b are integers such that $-5<a<-3$ and $a\times b=8$

What is a – b?

A) –2 **B) –1** **C) 2** **D) 3**

Solution:

$-5<a<-3\Rightarrow a=-4$

$\Rightarrow a\times b=8\Rightarrow(-4)\times b=8\Rightarrow b=-2$

$\Rightarrow a-b=-4-(-2)=-4+2=-2$

Answer: A

Q10: What is the number that is $\frac{1}{4}$ of $\frac{1}{2}$ of $\frac{1}{5}$ of 200?

A) 5 **B) 10** **C) 25** **D) 50**

Solution:

$$\frac{1}{4}\times\frac{1}{2}\times\frac{1}{5}\times200=\frac{1}{\cancel{40}_{1}}\times\cancel{200}^{5}=5$$

Answer: A

Q11: $\left(1-\frac{1}{2}\right)\times\left(1-\frac{1}{3}\right)\times\left(1-\frac{1}{4}\right).....\left(1-\frac{1}{30}\right)=?$

A) 1 **B)** $\frac{1}{29}$ **C)** $\frac{1}{30}$ **D)** 30

Solution:

$$\left(1-\frac{1}{2}\right)\times\left(1-\frac{1}{3}\right)\times\left(1-\frac{1}{4}\right).....\left(1-\frac{1}{30}\right)=$$

$$\frac{1}{2}\times\frac{2}{3}\times\frac{3}{4}\times.....\times\frac{29}{30}=\frac{1}{\cancel{2}}\times\frac{\cancel{2}}{\cancel{3}}\times\frac{\cancel{3}}{\cancel{4}}\times.....\times\frac{\cancel{29}}{30}=\frac{1}{30}$$

Answer: C

Q12: A man can travel 300 km on 12 liters of petrol. How many liters of petrol are needed to drive 750 km?

A) 24 **B) 30** **C) 36** **D) 48**

Solution:

300 km on 12 liters of petrol

150 km on 6 liters of petrol

5x150=750 km on 5x6=30 liters of petrol

Answer: B

Q13: Evaluate $\frac{1}{0.2}+\frac{1}{0.3}+\frac{1}{0.4}+\frac{1}{0.5}$

A) $\frac{77}{6}$ B) $\frac{33}{7}$ C) $\frac{74}{7}$ D) $\frac{75}{11}$

Solution:

$$\frac{1}{0.2}+\frac{1}{0.3}+\frac{1}{0.4}+\frac{1}{0.5}=\frac{1}{\frac{2}{10}}+\frac{1}{\frac{3}{10}}+\frac{1}{\frac{4}{10}}+\frac{1}{\frac{5}{10}}\Rightarrow$$

$$10\times\left(\frac{1}{2}+\frac{1}{3}+\frac{1}{4}+\frac{1}{5}\right)=10\times\frac{30+20+15+12}{60}=\frac{77}{6}$$

Answer: A

Q14: $\frac{5}{1+\frac{1}{4}}-\frac{\left(1-\frac{1}{4}\right)}{3}=?$

A) $\frac{4}{5}$ B) $\frac{9}{2}$ C) $\frac{5}{4}$ D) $\frac{15}{4}$

Solution:

$$\frac{5}{1+\frac{1}{4}}-\frac{\left(1-\frac{1}{4}\right)}{3}=\frac{5}{\frac{5}{4}}-\frac{\frac{3}{4}}{3}=5\times\frac{4}{5}-\frac{3}{4}\times\frac{1}{3}=4-\frac{1}{4}=\frac{15}{4}$$

Answer: D

Q15: Which of the following is not equal to 16?

A) 4^2 B) 2^4 C) $32-4^2$ D) $4+\frac{16}{4}$

Solution:

D) $4+\frac{16}{4}=4+4=8$

Answer: D

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

A) $\frac{3}{10}$ B) $\frac{3}{5}$ C) $\frac{7}{10}$ D) $\frac{8}{5}$

Solution:

$$\frac{1^2+2^2+3^2+4^2}{(1+2+3+4)^2}=\frac{1+4+9+16}{10^2}=\frac{30}{100}=\frac{3}{10}$$

Answer: A

Q17: Which of the following is a positive number?

A) $8\times(-13)\times 0$ B) $9\times 13\times(-13)$

C) $(-7)\times 17\times(-7)$ D) $(-8)\times(-8)\times(-8)$

Solution:

C) $(-7)\times 17\times(-7)=(-)\times(-)\times 7\times 17\times 7=7\times 17\times 7$

Answer: C

Q18: Find the remainder when 812245 is divided by 11

A) 7 B) 1 C) 9 D) 5

Solution:

$$11\overline{)\,812245}\quad 73840$$

Remainder=5

Answer: D

Q19: If $a=\frac{2}{0.03}, b=\frac{4}{0.05}, c=\frac{6}{0.07}$

Which of the following is correct?

A) $c<a<b$ **B)** $c<b<a$

C) $a<b<c$ **D)** $a<c<b$

Solution:

$$a=\frac{2}{0.03}=66.7,\ b=\frac{4}{0.05}=80,\ c=\frac{6}{0.07}=85.7\Rightarrow$$

$$a<b<c$$

Answer: C

Q20: Find the greatest number that will divide 109, 137 and 165 so as to leave the same remainder in each case.

A) 4 **B) 7** **C) 9** **D) 13**

Solution:

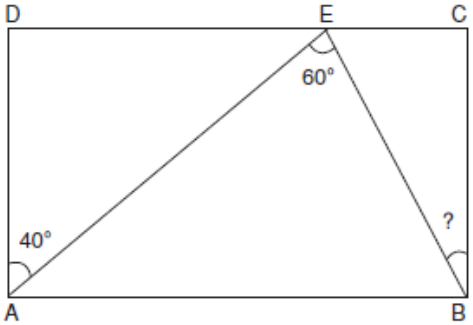
109÷7= (Remainder=4)

137÷7= (Remainder=4)

165÷7= (Remainder=4)

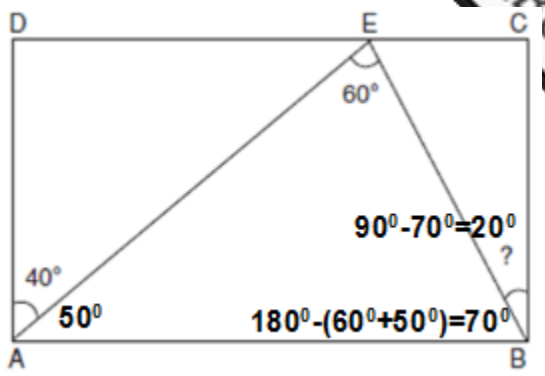
Answer: B

Q21: Find the unknown angle in the rectangle.



A) 10 **B) 20** **C) 30** **D) 40**

Solution:



Answer: B

Q22: If $a=0.3$ and $b=0.6$

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

A) 5 **B)** 3 **C)** $\frac{4}{3}$ **D)** $\frac{5}{2}$

Solution:

$$\frac{a}{b}+\frac{b}{a}=\frac{0.3}{0.6}+\frac{0.6}{0.3}=\frac{3}{6}+\frac{6}{3}=\frac{1}{2}+2=\frac{5}{2}$$

Answer: D

Q23: A number when divided by 6 leaves a remainder 3. What will be the remainder when the square of the number is divided by 6?

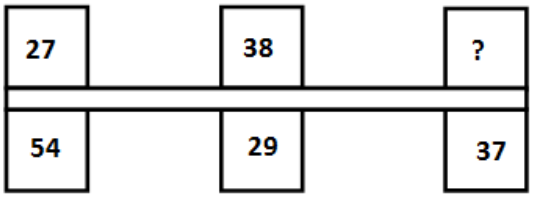
A) 2 **B) 3** **C) 6** **D) 9**

Solution:

Let's take any number like 9÷6 (gives remainder 3) and 9^2=81÷6 (gives also remainder 3)

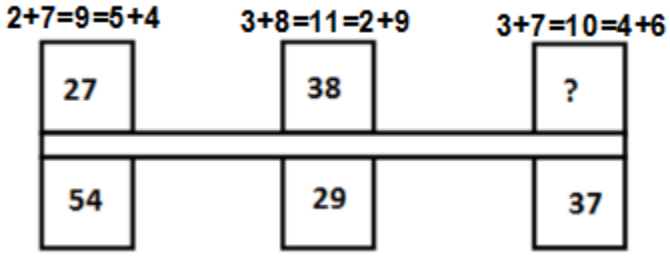
Answer: B

Q24: These numbers are arranged according to a certain rule. Find the number indicated by question mark.



A) 46 **B) 38** **C) 75** **D) 93**

Solution:



Answer: A

Q25: Simplify $\dfrac{0.5}{0.6+\dfrac{1}{0.5+\dfrac{1}{0.5}}}$

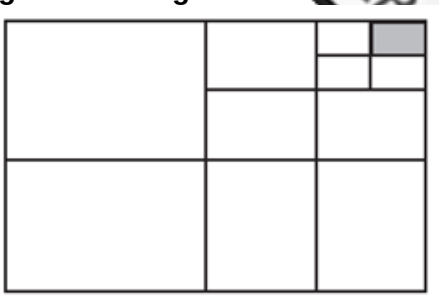
A) $\frac{2}{5}$ **B)** $\frac{1}{2}$ **C)** $\frac{3}{5}$ **D) 1**

Solution:

$$\frac{0.5}{0.6+\dfrac{1}{0.5+\dfrac{1}{0.5}}}=\frac{\frac{1}{2}}{\frac{6}{10}+\dfrac{1}{\frac{1}{2}+\dfrac{1}{\frac{1}{2}}}}=\frac{\frac{1}{2}}{\frac{6}{10}+\dfrac{1}{\frac{1}{2}+2}}=\frac{\frac{1}{2}}{\frac{3}{5}+\frac{2}{5}}=\frac{1}{2}$$

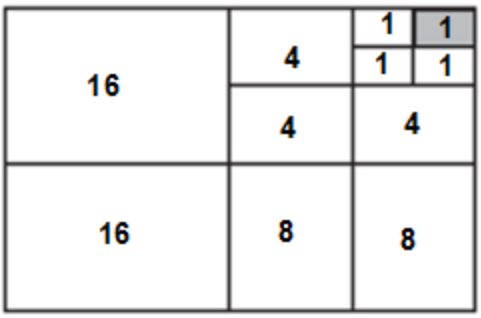
Answer: B

Q26: Which of the following is the fraction of the shaded region in the figure?



A) $\frac{1}{16}$ **B)** $\frac{1}{32}$ **C)** $\frac{1}{48}$ **D)** $\frac{1}{64}$

Solution:



Answer: D

Q27: A person crosses a 600 m long street in 5 minutes. What is his speed in km per hour?

A) 6.8 km/hr. **B) 7.0 km/hr.**

C) 7.2 km/hr. **D) 7.4 km/hr.**

Solution:

$$s=\frac{d}{t}=\frac{600}{1000}\div\frac{5}{60}=\frac{6}{10}\div\frac{1}{12}=\frac{6}{10}\times 12=7.2km/h$$

Answer: C

Q28: Which of the following is an odd number if m is odd and n is an even number?

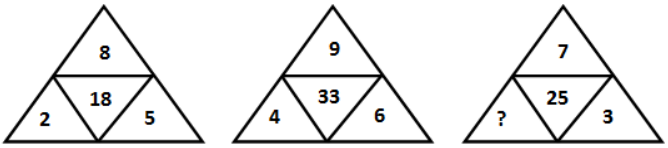
A) m^2+mn **B)** $2m+3n$
C) $4m^2+n^2+mn$ **D)** $2m^3+n$

Solution:

A) $m^2+mn=1^2+1\times 2=1+2=3(odd)$

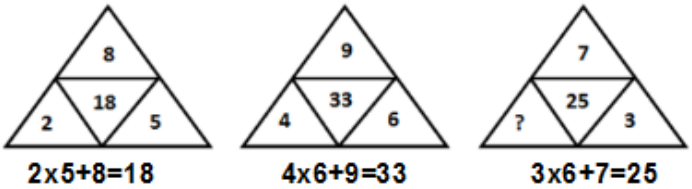
Answer: A

Q29: Find the number which is represented by '?' in the number pattern?



A) 4 **B) 5** **C) 6** **D) 7**

Solution:



Answer: C

Q30: On a bus, the number of women is five less than the number of men. Twelve women and eight men get off the bus. There are 21 passengers left on the bus.
How many women were there on the bus at the beginning?

A) 18 **B) 19** **C) 20** **D) 21**

Solution: Women:x-5, Men: x ; x+x-5-12-8=21 then

2x=46 then x=23 then women=23-5=18

Answer: A

Q31: The LCM of 16 and 24 is x and the HCF of 18 and 48 is y
What is the value of $x+y$?

A) 78 **B) 54** **C) 60** **D) 66**

Solution:

The LCM of 16 and 24 is $x=48$ and the HCF of 18 and 48 is $y=6$ the value of $x+y=48+6=54$

Answer: B

Q32: What is the missing number in the sequence shown below?
1, 8, 27, ?, 125, 216

A) 36 **B) 45** **C) 64** **D) 99**

Solution: $4^3=64$

Answer: C

Q33: According the rule used below

$$1+2+3=\frac{3\times 4}{2}=6$$

$$1+2+3+4+5=\frac{5\times 6}{2}=15$$

, find the sum of the natural numbers up to 15

A) 105 **B) 135** **C) 120** **D) 145**

Solution:

$$1+2+3+\ldots+15=\frac{15\times 16}{2}=15\times 8=120$$

Answer: C

Q34: There are 300 chairs in conference hall. If 36 % of the chairs are given to the female and 24 % of chairs are given to the males, then how many chairs left for the children?

A) 80 B) 120 C) 160 D) 200

Solution:

36%+24%=60% means remaining 40% for the children. That is 40% of 300=120 chairs

Answer: B

Q35: What is the number of whole numbers that lie between 4^2 and 4^3 ?

A) 46 B) 47 C) 48 D) 49

Solution:

between 4^2 and 4^3 means between 16 and 64.

64-16=48 then 48-1=47.

Answer: B

Q36: A library has an average of 510 visitors on Sundays and 240 on other days. The average number of visitors per day in a month of 30 days beginning with a Sunday is:

A) 218 B) 244 C) 285 D) 290

Solution:

5 Sundaysx510visitors=2550 visitors and

remaining days without Sunday is

25x240= 6000 visitors.

Average= (6000+2550)/30=285

Answer: C

Q37: $1\times\frac{1}{2}+1,\ 2\times\frac{1}{2}+1,\ 3\times\frac{1}{2}+1,\ 4\times\frac{1}{2}+1,\ ..$

The Pattern above is formed according to a rule. Find the twentieth term in the number pattern.

A) 11 B) 17 C) 19 D) 21

Solution:

$$20\times\frac{1}{2}+1=10+1=11$$

Answer: A

Q38: In a class of 40 students, 70 % of them are boys. What will be the percentage of girls in the same classroom after 8 boys leave the school?

A) 35.5% B) 36% C) 37% D) 37.5%

Solution:

30% of 40=12 girls.

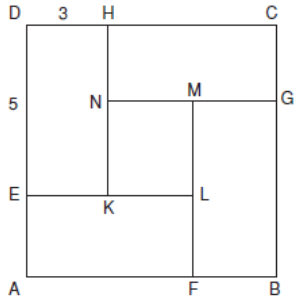
When 8 boys leave there will be 32 students.

The percentage of

girls=(12x100)/32%=75/2%=37.5%

Answer: D

Q39: The figure below is made by four congruent rectangles and 1 square. Find the sum of perimeter of all quadrilaterals.



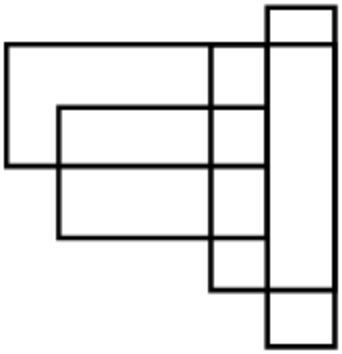
A) 72 B) 76 C) 80 D) 84

Solution:

Perimeters of 4 rectangles: 4x2x(3+5)=64 and perimeter of 1 square: 4x2=8cm. Total perimeter is 64+8=72cm

Answer: A

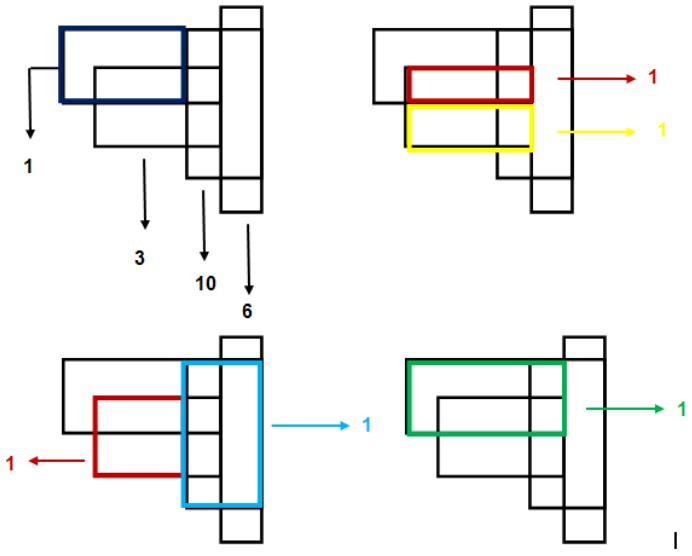
Q40: How many four-sided figures appear in the diagram below?



A) 23 B) 24 C) 25 D) 26

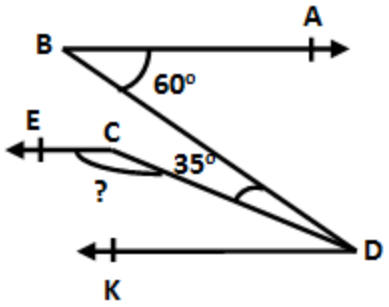
Solution:

There are total 25 four-sided figures.



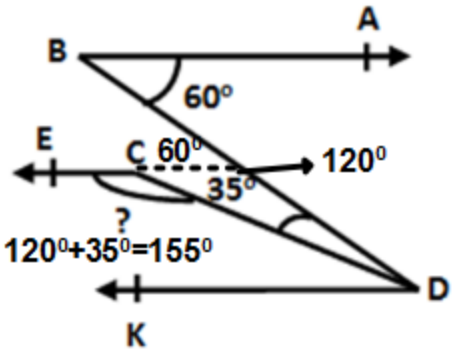
Answer: C

Q41: Find the unknown angle in the figure if $BA//EC//KD$.



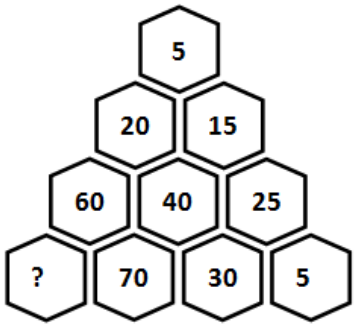
A) 145° B) 150° C) 155° D) 160°

Solution:



Answer: C

Q42: The numbers arranged according to a certain rule. Find the number indicated by question mark.



A) 130 B) 135 C) 140 D) 125

Solution:

According to the certain rule x-70=60 then

x=70+60=130

Answer: A

Q43: A train leaves Lahore station and travels at 50 km/h. Two hours later, another train leaves from Lahore station on the track beside or parallel to the first train but it travels at 100 km/h. How far away from Lahore station will the faster train pass the other train?

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

Solution:

After 4 hrs. when slow train left, they will cover the same distance:

Slow train 4x50 km/h = 200 km

Fast train 2x100 km/h = 200 km

Answer: C

Q44: On a farm there are 20 rabbits, 10 geese and 25 chickens. There are no other animals. The price of two chickens equals the price of a rabbit and the price of three chickens equals the price of a goose. If a rabbit costs Rs. 12, what is the total value of all the animals on the farm?

A) Rs. 510 **B) Rs. 540**
C) Rs. 560 **D) Rs. 570**

Solution:

Rabbit cost: Rs.12x20=Rs.240
Chicken cost: Rs.6x25= Rs.150
Goose cost: Rs.18x10=Rs.180
Total value: 240+150+180=Rs.570

Answer: D

Q45: Which one of the following is the smallest when $x=6$?

A) x^2+1 **B)** $3x+6$
C) $5x$ **D)** $2(x+14)$

Solution:

A) $x^2+1=6^2+1=37$
B) $3x+6=3\times6+6=24$
C) $5x=5\times6=30$
D) $2(x+14)=2(6+14)=2\times20=40$

Answer: B

Q46: Find the difference between the largest and the smallest four digit number formed with the digits: 5, 3, 0, 1

A) 4225 **B) 4720** **C) 3750** **D) 4275**

Solution:

5310-1035=4275

Answer: D

Q47: What is the value of the sum of the smallest and the greatest positive factors of 96?

A) 49 **B) 55** **C) 109** **D) 97**

Solution:

96+1=97

Answer: D

Q48: Safia is baking cookies for 24 children. She has baked 3 dozen cookies. If she wants each child to receive exactly 2 cookies and have no cookies left over, how many more cookies should she bake?

A) 12 **B) 16** **C) 24** **D) 32**

Solution:

She has baked 3x12=36 cookies

24x2=48 cookies will be received. So 48-36=12

cookies has to be baked.

Answer: A

Q49: Rashid needs 13 bottles of water from the store. He can only carry 3 at a time. What is the minimum number of trips Rashid needs to make to the store?

A) 3 B) 4 C) 5 D) 6

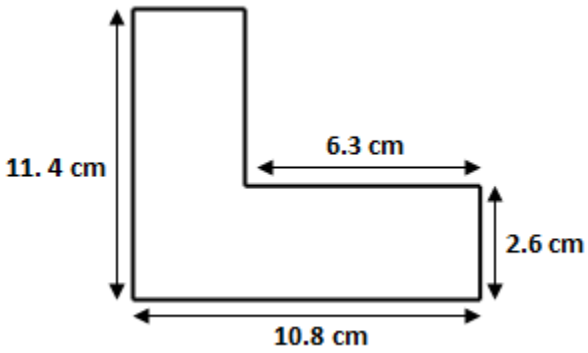
Solution:

4 trips make 4x3=12 bottles. For 13th bottle he has

to go one more time. It makes 5 trips.

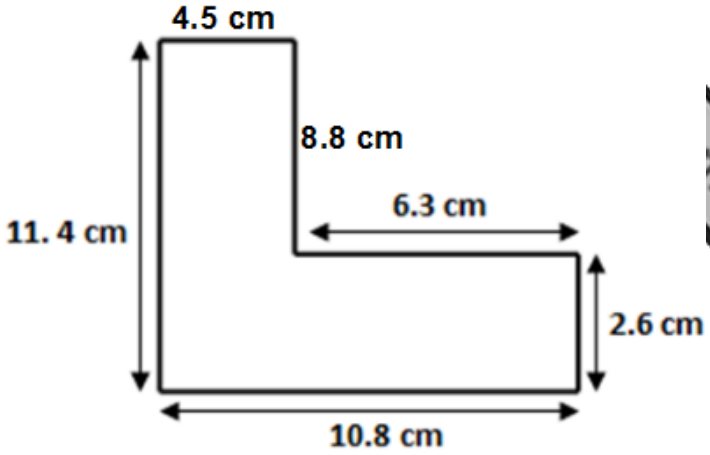
Answer: C

Q50: Find the perimeter of the following



A) 44.4 cm B) 42.2 cm C) 48.8 cm D) 48 cm

Solution:



The perimeter=2x(11.4+10.8)=2x22.2=44.4 cm

Answer: A