

২০১৭-১৮ সালের ব্যাংক পরীক্ষাগুলোর গণিত প্রশ্ন ও সমাধান

By [bekar jibon](#) February 20, 2018 [৪০তম বিসিএস প্রস্তুতি](#), [PDF ডাউনলোড](#), [কমবাইন্ড ব্যাংক পরীক্ষার প্রস্তুতি](#), [গণিত টিপস](#), [চাকরি পরীক্ষার প্রস্তুতি](#), [বাংলা সাহিত্য ও ব্যাকরণ](#), [ব্যাংক পরীক্ষার প্রস্তুতি](#) [0 Comments](#)

সবার আগে আপডেট পেতে পেইজে লাইক দিন

The sum of two numbers is equal to thrice their difference. If the smaller of the number is 10. Find the other number

Solution:

Let,

The larger number be= x

According to the question,

$$x+10 = 3(x-10)$$

$$\text{or, } x+10 = 3x-30$$

$$\text{or, } -2x=-40$$

$$\text{Or, } x = 20$$

Answer:20

The average age of 8 men is increased by 2 years when one of them whose age is 24 years is replaced by a woman. What is the age of the woman?

Solution:

$$8 \text{ person total age increases } = [8 \times 2] = 16 \text{ years}$$

$$\text{So, The woman age will be } = [16+24] = 40 \text{ years}$$

Answer:40 years

50% of a% of b is 75% of b% of C. Which of the following is C?

Solutions:

According to the question,

$$(50/100 \times a/100) \text{ of } b = (75/100 \times b/100) \text{ of } C$$

$$\text{Or, } C=0.667a$$

Answer:0.667a

A makes an article for TK.120 and sells it to B at a profit of 25% .B sells it to C who sells it for TK.198 making a profit of 10%. What profit percent did B make?

Solution:

25% profit

$$\text{A's Selling price} = 125\% \text{ of } 120$$

$$= 150 \text{ Tk}$$

$$= \text{B's Cost price}$$

10% Profit

C's Sp=110 TK

SP 110 TK Then CP=100 tk

SP 198 TK Then CP=[100*198]/110

= 180 Tk

=B's Selling Price

So B profit =[(180-150)/150]*100 =20%

Answer:20%

A sum of TK.600 amounts to TK.720 in 4 years at simple interest. What will it amount to if the rate of interest is increased by 2% ?[Difficult]

Solution:

Let

Rate of interest=r%

We know

$$P=100*a/100+(r*t)$$

$$\text{Or, } 600=(100*720)/[100+(4*r)]$$

$$\text{Or, } r =5$$

$$\text{Rate increased by } 2\%=(5+2)=7\%$$

Again we know

$$I=Prn$$

$$\text{Or, } I=(600*7*4)/100$$

$$\text{Or, } I =168 \text{ Tk}$$

$$\text{So Amount}=(600+168)=768 \text{ Tk}$$

Answer:768 Tk

The sum of first five prime number is :

Solution:

The first five prime number

$$=2+3+5+7+11=28$$

What is the following is equal to 3.14×10^6 ?

Solution:

$$3.14*10^6$$

$$= (314/100)*10000$$

$$=3140000$$

Answer:3140000

If $x=1 - q$ and $y = 2q+1$, then for what value of q. x is equal to y ?

Solution:

Since $x = y$

So,

$$1 - q = 2q+1$$

$$\text{or, } -3q = 0$$

So, $q = 0$

Answer: 0

3 years ago, the average age of a family of 5 members was 17 years. A baby having been born, the average age of the family is the same today. The present age of the baby is

Solution:

3 years ago 5 member average age = 17 years

Now their present average age = $17 + 3 = 20$ years

And

Their total age now = $20 \times 5 = 100$

5 person with baby's now total age = $6 \times 17 = 102$ years

The present age of baby = $(102 - 100)$ years = 2 years

Answer: 2 years

There are two numbers such that the sum of twice the first and thrice the second is 39, while the sum of thrice the first and twice the second is 36. The largest of the two is

Solution:

Let,

The first number is x

and

Second number is y

First condition, $2x + 3y = 39$ — (1)

2nd condition $3x + 2y = 36$ — (2)

By solving the 1 & 2 equation we get $x = 6$ and $y = 9$

So, largest number is 9

Answer: 9

A person was asked to state his age in years. His reply was, "take my age three years hence, multiple it by 3 and then subtract three times my age three years ago and you will know how old I am." What was the age of person?

Solution:

Person present age = x years

After 3 years = $x + 3$

Before 3 years = $x - 3$

According to the question,

$3(x + 3) - 3(x - 3) = x$

Or, $3x + 9 - 3x + 9 = x$

Or, $x = 18$

Answer: 18 years

If $\sqrt[n]{2^n} = 64$, then the value of n is

Solution:

$2^n = 64$

or, $2^n = 2^6$

Both A+B time taken

$$=A*B/A+B$$

$$=5*20/5+20$$

$$=4 \text{ hrs}$$

Due to a leakage time taken to fill the tank $= (4+.5)=4.5$ hours

So leakage pipe time taken to empty

$$= (4.5*4)/4.5-4$$

$$=36 \text{ hrs}$$

Answer:36 hrs

A train can travel 50% faster than a car. Both start from point A at the same time and reach point B 75kms away from A at the same time . On the way , however , the train lost about 12.5 minutes while stopping at the station . The speed of the car is[Difficult]

Solution:

Speed ratio of Train and Car

$$=150:100$$

$$= 3:2$$

Let,

Speed of train= $3x$

Speed of car= $2x$

According to the question,

$$75/2x - 75/3x = 12.5/60$$

$$\text{Or, } x = 60$$

The speed of the car= $2*60$

$$=120 \text{ km/hr}$$

Answer:120 km/hr

A towel , when balanced was found to have lost 20% of its length and 10% of its breadth . The percentage of decrease in area is Solution:

$$\text{First loss} = 100 - 20 = 80$$

Then second loss

$$= 80 - 80 \text{ of } 10\%$$

$$= 8\%$$

$$\text{Total decrease} = (20+8) = 28\%$$

Answer:28%

$$(87*87+67*67-2*87*61)=?$$

Solutions:

Let,

$$87=a$$

$$67=b$$

$(a-b)^2$ er formula

$$(87-61)^2$$

$$= 26^2$$

$$= 676$$

Answer:676

Which of the following is not a prime number?

Answer:91

$$138.009+341.981-146.305=123.6+?$$

Answer:210.085

The average of first 50 natural numbers is

Solutions:

MCQ Way=====

$$\text{Average} = [\text{Last} + \text{First}] / 2$$

$$= (50 + 1) / 2$$

$$= 25.5$$

Answer:25.5

The sum of two numbers is 40 and their difference is 4. The ratio of the numbers is

Solution:

Let

The numbers x & y

So,

$$x + y = 40 \text{ ————— (1)}$$

And

$$x - y = 4 \text{ ————— (2)}$$

From two equations

$$x = 22$$

$$y = 18$$

$$\text{Ratio} = 11:9$$

Answer:11:9

One year ago, Punky was four times as old as her daughter Soma. Six years hence, Punky's age will exceed her daughter's age by 9 years. The ratio of the present ages of pinky and her daughter is

Solution:

Short cut way==

Back solve

$$13 - 4 = 9$$

$$(13 - 1) \div 3 = 4$$

$$\text{Ratio of present age Pinky and her daughter} = 13:4$$

Answer:13:4

In a certain store the profit is 320% of the cost. If the cost increases by 25% but, the selling price remains constant, approximately what percentage of the selling price is the profits?

Solutions:

$$\text{Initial cost price} = 100 \text{ Tk}$$

$$320\% \text{ profits sell price} = 420 \text{ Tk}$$

$$25\% \text{ increase CP} = 125 \text{ Tk}$$

$$\text{Profit} = (420 - 120) = 295 \text{ Tk}$$

Percentage of profit

$$= (295 \times 100) / 420$$

$$= 70\%$$

Answer: 70%

A certain number of men can a piece of work in 100 days. If there were 10 less men, it would take 10 days more for the work to be finished. How many men were there originally?

Solutions:

Let,

Originally men = x

Short cut way =====

$$x \times 100 = 110(x - 10)$$

$$x = 110$$

Answer: 110

A sum of money lent out at simple interest amounts to Tk 720 after years and to Tk 1020 after a further period of 5 years. The sum is

Solution:

$$7 \text{ yr sum} + \text{profit} = 1020 \text{ Tk}$$

$$2 \text{ yr sum} + \text{profit} = 720 \text{ Tk}$$

$$5 \text{ yr } \langle \rangle \langle \rangle \langle \rangle \langle \rangle \langle \rangle \langle \rangle \langle \rangle \langle \rangle \langle \rangle 300 \text{ Tk}$$

$$2 \text{ yr profit } \langle \rangle \langle \rangle \langle \rangle \langle \rangle \langle \rangle \langle \rangle \langle \rangle \langle \rangle \langle \rangle 300 \times 2/5$$

$$= 120 \text{ Tk}$$

$$\text{Sum} = 720 - 120$$

$$= 600 \text{ Tk}$$

Answer: 600 Tk

The ratio between the perimeter and the breadth of a rectangle is 5:1. If the area of the rectangle is 216 sq.cm, what is the length of the rectangle?

Solutions:

Let,

Length be = x cm

Breadth be = y cm

According to the question,

$$2(x + y) : y = 5 : 1$$

$$\text{Or, } 2x + 2y = 5y$$

$$\text{Or } x = 3y/2 \text{ ————— (1)}$$

Now

$$\text{Area} = 216$$

$$\text{Or, } xy = 216$$

$$\text{Or, } 3y^2 = 216 \times 2$$

$$\text{Or, } y = 12$$

So $x = 12 \times \frac{3}{2} = 18$ cm

Answer: 18 cm

How many times in a day the hands of a clock are straight?

Solution:

»Straight line=22

»coincide line=22

»Right angle=44

»Acute/ obtuse=44

$(0.04)^{-1.5} = ?$

Solution:

$= 1 \div (4/100)^{1.5}$

$= 1 \div (1/25)^{1.5}$

$= 1 \div (1/5)^{(2 \times 1.5)}$

$= 1 \div (1/5)^3$

$= 125$

Answer: 125

The sum of two numbers is 40 and their difference is 4. The ratio of numbers is

Solution:

Let

first number is x and second number is y

$x + y = 40$ ———(1)

$x - y = 4$ ———(2)

Solving 1 & 2 equation

$x : y = 22 : 18$

$= 11 : 9$

Answer : 11:9

A is faster than B. A and B each walk 24km. The sum of their speeds is 7 Km/hr and the sum of times taken by them is 14 hours. Then, A's speed is equal to

Solution:

Let

The speed of A = x km/hr

and

Speed of B = 7-x km/hr

According to the question,

$\frac{24}{x} + \frac{24}{7-x} = 14$

Or, $(168 - 24x + 24x) / (7x + x^2) = 14$

Or, $(x-3)(x-4) = 0$

SO

$x = 3$ or 4

A's speed = 4 km/h

Because A is faster Than B

Answer: 4 km/hrs

Two trains are running in opposite directions with the same speed. If the length of each train is 120 meters and they cross each other in 12 second , then the speed of each train(in km/hr) is

Solution:

Let

Speed of each train= x m/s

According to the question,

$$12 = (120 + 120) / (x + x)$$

$$\text{Or, } x = 10$$

So speed of each train

$$= 10 * (5/18)$$

$$= 36 \text{ KM/hrs}$$

Answer: 36 km/hr

A sum of money is borrowed and paid back in two annual installments of TK.882 each allowing 5% compound interest .The sum borrowed was

[Difficult Math]

Solution:

Let,

The sum is $=x$ tk

In first years compound

$$882 = x(1 + 5/100)^1$$

$$\text{Or, } 882 = 21x/20$$

$$\text{Or, } x = 840$$

Second year,

$$\text{Amount} = (840 + 882) = 1722 \text{ tk}$$

Second year compunded,

$$1722 = x(1 + 5/100)^1$$

$$\text{Or, } 1722 = 21x/20$$

$$\text{Or, } x = 1640$$

The sum borrowed was=1640 tk

Answer: 1640 tk

A gas tank is $1/5$ full and requires 32 gallons to make it $3/7$ th full.What is the capacity of the tank ?

Solution:

Let,

Capacity of the tank is= x gallons

According to the question,

$$3x/7 - x/5 = 32$$

$$\text{Or, } (15x - 7x)/35 = 32$$

$$\text{Or, } 8x = 32 * 35$$

$$\text{Or, } x = 140$$

Answer: 140 gallons

On selling 17 balls at Tk720,there is a loss equal to the cost price of 5 balls .The cost price of a ball is

Solution:

Let,

The cost price of a ball is x Tk

The cost price of 17 balls= $17 \times \text{Tk}$

The cost price of 5 balls = $5x \text{ Tk}$

We know,

Loss =cost price-selling price

Or, $5x=17x -720$

Or, $x=60 \text{ Tk}$

Answer:60 Tk

A and B can do a piece of work in 9 days,B and c in 12 days,A and C in 18 days.If all of them work together,then how much time will they take to finish the same work?

Solution:

A and B can do in 1 day= $1/9$ portion

B & C can do in 1 day = $1/12$ portion

C and A can do in 1 day= $1/18$ portion

2(A+B+C) can do in 1 day

$= (1/9+1/12+1/18)$

$=9/36$

$=1/4$

So,

(A+B+C) can do in 1 day= $1/(4*2)$

A ,B and C can do the whole work

$=1/(1/8)$

$=8 \text{ days}$

Answer:8 days

Two fifth of one fourth of three seventh of a number is 15 .what is the half of the number?

Solution:

Let,

The number be=x

According to the question,

$X*(2/5*1/4*3/7)=15$

Or, $X=350$

Half of that number

$=350/2$

$=175$

Answer:175

In a class 75% passed in English,60% in Mathematics and 25% failed in both the subjects.What percentage who passed in both subjects?

Solution:

MCQ Ways...

Total=All single-All both+None

$100=75+60-\text{Both passed}+25$

Or, Both subjects=60

Answer:60%

Note:সকল কিছু শতকরা দেওয়া থাকলে মোট ১০০ ধরতে হবে।

A person makes a profit of 10% on 25% of the quantity and a loss of 20% on the rest of the quantity. What is the gain or loss in percentage on the whole?

Solution:

Let,

100 quantity cost price 100 Tk

25% quantity= $100 \times 25\% = 25$

Profit 10%= $25 + 25 \text{ of } 10\% = 27.5$

75 quantity loss 20%

= $75 - 75 \text{ of } 20\%$

=60

Total selling= $(60 + 27.5) = 87.5$

Loss= $(100 - 87.5) = 12.5\%$

Answer:12.5% loss

Increasing the original price of an item by 10% the decreasing by 20% and then again increasing the price by 10% is equivalent to

Solution:

Let,

Original price=100 Tk

10% increase=110 Tk

20% decrease= $(110 - 110 \times 20\%)$

=88 Tk

Again,

10% increase = $(88 + 88 \text{ of } 10\%)$

=96.8 Tk

Decreasing= $(100 - 96.8) = 3.2\%$

Answer:3.2% decrease

A family had provision of food for 15 days. After 5 days 8 guests came and the provision lasted 6 days. How many are the members the family

Solution:

Suppose,

The number of members in the family= x

X person can consume in 15 days = 1 portion provision

1 person can consume in 1 day = $1/15x$ portion

According to the question,

$$5x/15x+6(x+8)/15x=1$$

$$\text{Or, } x = 12$$

Answer:12

In a row of trees,a tree is 7th from the left and 14th from the right end.How many trees are there in the row ?

Solution:

$$(14+7)-1=20$$

Answer:20

the average age of 12 children is 15 years.If another child comes the average age comes to 13.What is the age of the new child?

Solution:

$$\text{Age of new child} = (13*13-12*15) = -11$$

Answer:Wrong

A train 150 m long and running at a speed of 60 km per hour takes 30 seconds to cross a bridge.What is a length of the bridge?

Solution:

Let,

Length of bridge= x m

Speed of train

$$=60*(5/18)$$

$$=50/3 \text{ mps}$$

We know,

Distance=speed*time

$$\text{Or, } 150+x=60*(50/3)$$

$$\text{Or, } x=350$$

Answer:350 m

A dishonest shopkeeper professes to sell ghee at his cost price.But he uses a false weight of 950 g for a kg .His gain percentage is

Solution:

Gain percentage

$$=[(1000-950)/950*100]$$

$$=5.26\%$$

Answer:5.26%

A sum of money at simple interest amounts to Tk 2800 in 2 years and to Tk 3250 in 5 years at a rate of

Solution:

Principal+5 years interest=3250 Tk

Principal+2 years interest=2800 Tk

$$3 \text{ years interest}=450 \text{ Tk}$$

$$1 \text{ —————}=150$$

$$2 \frac{2800 - 300}{2800} = 150 \times 2 = 300 \text{ Tk}$$

$$\text{Principal} = (2800 - 300) = 2500 \text{ Tk}$$

Rate of interest

$$= \left[\left(\frac{150}{2500} \right) \times 100 \right] \%$$

$$= 6 \%$$

Answer: 6%

A dog takes 4 leaps for every 5 leaps of a hare but 3 leaps of the dog is equal to 4 leaps of the hare. Compare their speeds

Solution:

According to the question,

Dog 3 leaps is equal to 4 leaps hare

Dog 4 leaps is equal to

$$= (4 \times 4) / 3 = 16/3$$

Ratio of their speed

$$= 16/3 : 5$$

$$= 16 : 15$$

Answer: 16:15

In a mixture of liters milk and water are in the ratio of 3:2. How much water would be added to the mixture to make the two equal?

Solution:

Milk in the mixture

$$= 50 \times \left(\frac{3}{3+2} \right)$$

$$= 30 \text{ liters}$$

Water in the mixture

$$= (50 - 30)$$

$$= 20 \text{ liters}$$

Suppose,

X water liter would be added to the mixture to make half water & half milk

$$30 : (20 + x) = 1/2 : 1/2$$

$$\text{Or, } x = 10$$

Answer: 10 liters

If x is 90% of y then what percent of x is y ?

Solution:

$$X = .9y$$

$$y = x / .9 = 1.111x = 111.1\% \text{ of } x$$

Answer: 111.1%

A room of size 5m * 3m and height 3m requires walls and ceiling painting. What is the area to be painted?

Solution:

Total area of painted

$$\begin{aligned}
&= \text{The ceiling} + \text{four walls} \\
&= \text{length} * \text{breadth} + 2[L+b]h \\
&= 5*3 + 2[5+3]*3 \\
&= 63 \text{ square m}
\end{aligned}$$

Answer: 63 sq.m

The length and breadth of a square are increased by 40% and 30% respectively. The area of the resulting rectangle exceeds the area of the square by

Solution:

Short Cut way

Area changed

$$= 30 + 40 + (30*40)/100$$

$$= 82\%$$

Answer: 82%

A husband and wife have six married sons. Each of them has four children. The total number in the family is

Solution:

Total members

$$= (1 + 1 + 6 + 6 + 6*4)$$

$$= 38$$

Answer: 38

A and B together have Tk 1210. If $\frac{4}{15}$ of A's amount is equal to $\frac{2}{5}$ of B's amount. What is the amount B has?

Solution:

Let,

B's amount be = x

A's amount be = (1210 - x)

Now,

$$4(1210 - x)/15 = 2x/5$$

Or, x = 484

Answer: 484 Tk

$$5^{-3} + 5^{-3} + 5^{-3} + 5^{-3} + 5^{-3}$$

Answer: 5^{-2}

If two angles are said to be complementary angles and one angle is 52 then the other is

Answer: 38 degree

How many degrees are between the hands of a clock at 3:30

Solution:

$$\text{Angle} = [(11M - 60H)/2]$$

$$= [(11*30 - 60*3)/2]$$

=75 degree

Answer:75

An angle which is less than 360 degree and greater than 80 degree is called

Ans:Reflex angle

What is 200% of .010?

Answer:0.02

if $2x + y = 7$ and $x - y = 2$ then $x + y = ?$

Answer:4

For what value of x is

$$8^{(2x-4)} = 16^x$$

Answer:6

A father is 61 and his son is 16. In how many years will the father be twice as old as his son

Solution:

Let,

After x years father age be twice as old as son

Now

$$61 + x = 2(16 + x)$$

$$\text{Or, } x = 29$$

Answer:29 years

Two motorists drove their cars at a speed of 45 km per hour and 50 km per hour respectively .One car took 10 minutes longer than the other to travel a distance.Find the distance travelled

Solution:

Suppose

The distance be=x miles

According to the question,

$$X/45 - X/50 = 10/60$$

$$\text{Or, } x = 75$$

Answer:75 miles

Two trains of equal length are running on parallel lines in the same direction at 46 kilometre/hour and 36 kilometre/hour. The faster train pass to the slowest train in 36 seconds. The length of each train is-

Solution:

Let ,

The length of each train is x meter

Distance will be $x + x = 2x$

Relative Speed =46-36

$=10 \text{ km/hr}$
 $=10 \times (5/18)$
 $= 25/9 \text{ m/sec}$
 Distance = Speed*Time
 Here,
 $2x = (25/9) \times 36$
 or, $x = 50$ (Ans)

A man buys tk 20 shares paying 9% dividend. The man wants to have an interest of 12% on his money. The market value of each share is-

Solution:
 Divided on Tk 20
 $= (9 \times 20) / 100$
 $= 9/5$
 Tk 12 income on Tk 100
 Tk $9/5$ ————— $= (100/12 \times 9/5)$
 $= 15 \text{ Tk}$
 Answer: 15 Tk

By selling an article for TK 100 a man gains tk 15 then his gain percentage is –

Solution:
 Here,
 Selling Price = tk 100
 Gain = Tk 15,
 Buying or cost price
 $= (100 - 15) = \text{Tk } 85$,
 Therefore Gain % $= [(15 \times 100) / 85] = 17.64\%$
 Answer: 17.64%

The age of a man is 3 times the sum of the age of his two sons. 5 years hence, his age will be double of the sum of the ages of his sons the father's present age is-

Solution:
 Let ,
 The sum of present ages of the two sons be x
 Father's present age = $3x$
 Here,
 $(3x + 5) = 2(x + 10)$
 Or, $3x + 5 = 2x + 20$
 Or, $x = 15$.
 Father's present age is
 $(3 \times 15) = 45 \text{ years}$ (Answer)

If tk 64 amount to 83.20 in 2 years what will tk 86 amount to in 4 years in the same rate percent per annum?

Solution:

Let,

Rate of interest be=r

We know

$$P = (100 * \text{Amount}) / (100 + r * t)$$

$$\text{Or, } 64 = (100 * 83.20) / (100 + 2 * r)$$

$$\text{Or, } 6400 + 128 * r = 8320$$

$$\text{Or, } r = 15\%$$

Again

$$P = 86 \text{ Tk}$$

$$r = 15\%$$

$$T = 4 \text{ years}$$

$$I = (86 * 15 * 4 / 100)$$

$$= 51.6 \text{ Tk}$$

After 4 years amount will be

$$= (51.6 + 86) = 137.60 \text{ Tk}$$

Answer: 137.60 Tk

A train travels at an average 50 miles per hour for 2.5 hours and then Travels at a speed of 70 miles per hour for 1.5 hours How far did the train travel in the entire 4 hours ?

Solution:

Total distance covers in 4 hrs

$$= (50 * 2.5 + 70 * 1.5)$$

$$= 230 \text{ miles}$$

Answer: 230 miles

How many times in a day are the hands of a clock in straight line but opposite in direction?

Solution:

24 hrs in a clock

∝ Coincide and Straight line = 22

∝ Right angle & Acute or obtuse = 44

The sum of a number and its reciprocal is $\frac{1}{8}$ of 34. what is the product of the number and its square root

Solution:

Let

The number be x.

Then,

$$x + \frac{1}{x} = 34 * \frac{1}{8}$$

$$\text{Or, } 8x^2 - 34x + 8 = 0$$

$$\text{Or, } 4x^2 - 17x + 4 = 0$$

$$\text{Or, } (4x - 1)(x - 4) = 0$$

$$x = 4$$

Required number

$$= (4 * \sqrt{4})$$

$$= 4 * 2 = 8.$$

Answer:8

A sum of money invested at compound interest amounts to Tk 4624 in 2 years and to Tk 4913 in 3 years .The sum of money is.

Solution:

Simple interest(3-2)=1 year

$$=(4913-4624)=289 \text{ Tk}$$

SO,

$$\text{Rate}=[(100*289)/(4624*1)]$$

$$=25/4 \text{ or } 6.25\%$$

Let,

Sum of money be=x

Now,

$$X(1+25/4*100)^2=4624$$

$$\text{Or, } X=4096 \text{ Tk}$$

Answer:4096 Tk

If 75% of a number is added to 75. then the result is the number itself .The number is

Solution:

Let,

The number be=x

$$75\% \text{ of } x + 75 = x$$

$$\text{Or, } 75/100*x + 75=x$$

$$\text{Or, } 3x/4 + 75=x$$

$$=====$$

$$=====$$

$$\text{Or, } x=300$$

Answer:300

A rectangular field be fenced on three sides leaving a side of 20 feet uncovered.if the area of the field is 680 square feet .how many feet of fencing will be required?

Solution:

We know

$$\text{Length} * \text{Breadth} = \text{Area}$$

$$\Rightarrow 20 * \text{Breadth} = 680$$

$$\Rightarrow \text{Breadth} = 34 \text{ feet}$$

Area to be fenced

$$= 2B + L$$

$$= 2*34 + 20$$

$$= 88 \text{ feet}$$

Answer:88 feet

Two pipes A and B can fill a cistern in 12 minutes and 15 minutes respectively while a third pipe C can empty the full tank in 6 minutes .A and B are kept open for 5 minutes in the beginning and then C is also open. In what time is the cistern emptied –

Solution:

Part filled in 5 min

$$= 5 * (1/12 + 1/15)$$

$$= 5 * 9/60$$

$$= 3/4$$

Part emptied in 1 min when all the pipes are opened

$$= 1/6 - (1/12 + 1/15)$$

$$= 1/60$$

Now,

1/60 part is emptied in 1 min

3/4 part will be emptied in

$$(60 * 3/4) = 45 \text{ min}$$

Answer: 45 minutes

The least number which is a perfect square and is divisible by each of the number is 16, 20 and 24 is-

Solution:

LCM of 16, 20, 24 is = 240

Factors of 240 are

$$= 2 * 2 * 2 * 2 * 3 * 5$$

Hence to make 240 a perfect square we need to multiply by 5×3 as they are not in pair.

$$= 240 \times 5 \times 3$$

$$= 240 \times 5 \times 3$$

$$= 3600 \text{ (Answer)}$$

Gold is 19 times as heavy as water and copper is 9 times as heavy as water in what ratio should this be mixed to get an alloy 15 times as heavy as water :

Solution:

Let,

The mass of 1 volume unit of water be 1

Then 1 volume unit of gold has mass 19,

and

1 volume unit of copper has mass 9.

Now let g be the volume of gold used, and let c be the volume of copper. The total mass divided by the total volume is the density.

$$(19g + 9c)/(g + c) = 15$$

$$19g + 9c = 15g + 15c$$

$$4g = 6c$$

$$2g = 3c$$

$$g/c = 3/2$$

The volume ratio is 3:2.

The smallest prime number is-

Ans: 2

X can do a piece of work in 40 days he works at it for 8 days and then Y finished it in 16 days. How long will they take together take to complete the work

Solution:

Work done by X in 8 days

$$=(1/40 \times 8)$$

$$=1/5$$

Remaining work

$$=(1 - 1/5)$$

$$=4/5 \text{ portion}$$

Now,

4/5 portion work is done by Y in 16

Whole work Y done

$$=(16 \times 5/4)$$

$$=20 \text{ days}$$

Both X & Y 1 days work

$$=(1/40 + 1/20)$$

$$=3/40$$

Hence, X and Y will together complete in $=40/3$ or 13.33 days

Answer: 13.33 days

In a 300 m race A beats B by 22.5 metre or 6 seconds. B's time over the course is

Solution:

B runs 22.5 m in 6 seconds

B runs 300 m in $(6 \times 300)/22.5$

$$= 80 \text{ seconds}$$

B's time over the course = 80 seconds

Answer: 80 second

if the mean of 5 observations $X, X + 2, X + 4, x + 6$ and $X + 8$ is 11 then the mean of the last 3 observations is-

Solution:

First, you need to solve for x:

$$(x + x + 2 + x + 4 + x + 6 + x + 8) / 5 = 11$$

$$x + x + 2 + x + 4 + x + 6 + x + 8 = 55$$

$$5x + 20 = 55$$

$$5x = 35$$

$$x = 7$$

Now, substitute for x in each of the last three terms:

$$x + 4 + x + 6 + x + 8 = (7 + 4) + (7 + 6) + (7 + 8) = (11) + (13) + (15) = 39 / 3 = 13$$

The mean is 13.

A,B,C started business with their investment in the ratio 1 :3 :5 .After 4 month A invested the same amount as before and B as well as C withdrew half of their investment .The ratio of their profit at the end of the year is-

Solution:

Let

Their initial investments be x , $3x$ and $5x$ respectively

Then

A:B:C

$$=(x*4+2x*8):(3x*4+3x/2*8):(5x*4+5x/2*8)$$

$$=20x:24x:40x$$

$$=5:6:10(\text{Answer})$$

$\sqrt{(\sqrt{176} + \sqrt{2401})}$ is equal to-

Ans:15

49 pumps can empty a reservoir in 6.5 days, working 8 hours a day . If 196 pumps are used for 5 hours each day ,then the same work will be completed in-

Solution:

Easy solution

$$(M1 * T1)/W1 = (M2 * T2)/W2$$

$$\text{Or, } (49 * 6.5 * 8)/1 = 196 * 5 * T2/1$$

$$\text{Or, } T2 = 13/5 \text{ or } 2.6 \text{ days}$$

Answer:13/5 days