Smartkeeda
The Question Bank

TESTZONE

बैंक परीक्षाओं के लिए निश्चित रूप से सर्वश्रेष्ठ टेस्ट सीरीज

Kriti Advani
IBPS PO 2020, Clerk, RRB Clerk

Rahul Jha
All IBPS 2020 Exams

Kola Murali Krishna Sai
SBI PO & IBPS PO 2020

Nimish Mishra
IBPS RRB PO & IBPS Clerk 2020

Abhishek Raj
IBPS PO & RRB PO 2020

Subha Saha
IBPS PO & IBPS CLERK 2020

IT'S YOUR TURN NOW TAKE A FREE MOCK TEST

" **Friends!**

We used TESTZONE

And Cracked Bank Exams "

Maths Inequalities Questions for SBI PO Pre, IBPS PO Pre, SBI Clerk Mains, IBPS Clerk Mains and RRB Scale I Pre Exams.

Maths Inequalities Quiz 19

Directions: In each of the following questions, read the given statement and compare the Quantity I and Quantity II on its basis. (only quantity is to be considered)

1. **Quantity I :** The length of the diagonal of a rectangle is three – fifth of the side of a square of area 756.25 sq. cm. If the length of the rectangle is 3.3 cm more than that of the breadth, then what is the area of the rectangle?

   Quantity II : 125 sq. cm

   A. Quantity : I > Quantity : II   B. Quantity : I ≥ Quantity : II   C. Quantity : I < Quantity : II
   D. Quantity : II ≥ Quantity : I   E. Quantity I = Quantity II or relation can't be established

2. **In a government school, out of the total number of students present, 20% left before the lunch break and 20% of the remaining left during the lunch break.**

   Quantity I : After lunch break, what percent of the total present students were still remaining in the school?

   Quantity II : 60%

   A. Quantity : I > Quantity : II   B. Quantity : I ≥ Quantity : II   C. Quantity : I < Quantity : II
   D. Quantity : II ≥ Quantity : I   E. Quantity I = Quantity II or relation can't be established

3. **In a certain city, the average low temperature of two consecutive days (Monday and Tuesday) was 26 degree Celsius and the average high temperature was 32 degree Celsius.**

   Quantity I : The low temperature of Monday was equal to that of the high temperature of Tuesday, then the high temperature of Monday was how many degrees Celsius more than the low temperature of Tuesday?

   Quantity II : 12.5 degree Celsius

   A. Quantity : I > Quantity : II   B. Quantity : I ≥ Quantity : II   C. Quantity : I < Quantity : II
   D. Quantity : II ≥ Quantity : I   E. Quantity I = Quantity II or relation can't be established

Join us

4. **Quantity I :** The mileage of a bike is 32 km per litre. A person fills 6.5 litres petrol in the tank of the bike and after travelling for some distance he found that still 1.25 litres of petrol was left in the bike. How many kms did he travel by the bike with the petrol that's been consumed?

Quantity II : The mileage of a bike is 48 km per litre. A person fills 7.25 litres petrol in the tank of the bike and after riding for some distance, he found that still 3.75 litres of petrol was left in the bike. How many kms did he travel by the bike with the petrol that's been consumed?

A. Quantity : I > Quantity : II   B. Quantity : I ≥ Quantity : II   C. Quantity : I < Quantity : II
D. Quantity : II ≥ Quantity : I   E. Quantity I = Quantity II or relation can't be established

5. **The efficiency of inlet pipe P is 20% more than that of the inlet pipe Q so the pipe P takes 24 minutes less to fill a water tank of capacity 6000 litres.**

Quantity I : How much time, the pipe P and the pipe Q together will take to fill a water tank of capacity 8800 litres?

Quantity II : 99 minutes

A. Quantity : I > Quantity : II   B. Quantity : I ≥ Quantity : II   C. Quantity : I < Quantity : II
D. Quantity : II ≥ Quantity : I   E. Quantity I = Quantity II or relation can't be established

6. **Quantity I :** The perimeter of a rectangular park is 192 m. If the length of the park is 56 m, then find the cost of cleaning the entire area of the park at Rs. 9 per m^2.

Quantity II : The radius and the height of a cylindrical tank are 21 m and 17 m, respectively. If the cost of filling water in the tank is Rs. 0.85/m^3, then find the cost required to fill the tank completely.

A. Quantity : I > Quantity : II   B. Quantity : I ≥ Quantity : II   C. Quantity : I < Quantity : II
D. Quantity : II ≥ Quantity : I   E. Quantity I = Quantity II or relation can't be established

7. **Quantity I :** A vessel contains 80 L solution having 70% alcohol concentration. 20 litres of the solution is taken out and replaced with 15 litres of water, then what is the new concentration of alcohol in the mixture.

Quantity II : Age of Shreya and Mira are in the ratio 3 : 7 and if the ratio of ages of Shreya 10 years hence and Mira 5 years ago is 5: 6, then what is the sum of their ages 5 years hence?

A. Quantity : I > Quantity : II   B. Quantity : I ≥ Quantity : II   C. Quantity : I < Quantity : II
D. Quantity : II ≥ Quantity : I   E. Quantity I = Quantity II or relation can't be established

8.   **Quantity I :** How much water must be added to 15 litres of milk – water mixture of ratio 4 : 1, such that the ratio of milk and water in mixture becomes 3 : 2?

             Quantity II : In what quantity of alcohol – water mixture of ratio 2 : 1, should 2 litres of water be added, such that the ratio of the final mixture is 1 : 1?

A. Quantity : I > Quantity : II   B. Quantity : I ≥ Quantity : II   C. Quantity : I < Quantity : II
D. Quantity : II ≥ Quantity : I   E. Quantity I = Quantity II or relation can't be established

9.   **Quantity I :** The average age of four brothers Ram, Lakshman, Bharat and Shatrughan is 27 years. The ratio of age of Ram 2 years hence and age of Lakshman 4 years hence is 9 : 7 respectively, and the ratio of age of Bharat 4 years before and age of Shatrughan 6 years before is 3 : 2 respectively. Find the age of Bharat if Lakshman is 2 years older than Shatrughan.

             Quantity II : The average age of five brothers Arjun, Bhim, Yudhisthir, Nakul and Sahadev is 30 years. The ratio of age of Arjun 5 years hence and age of Bhim 7 years ago is 7 : 5 respectively, and the ratio of age of Yudhisthir and age of Nakul is 3 : 2 respectively. Find the age of Sahadev, if Sahadev is 2 years younger than Arjun and 4 years older than Nakul.

A. Quantity : I > Quantity : II   B. Quantity : I ≥ Quantity : II   C. Quantity : I < Quantity : II
D. Quantity : II ≥ Quantity : I   E. Quantity I = Quantity II or relation can't be established

10.   **Quantity I :** $x^2 - 24x + 143 = 0$

             Quantity II : $y^2 - 20y + 96 = 0$

A. Quantity : I > Quantity : II   B. Quantity : I ≥ Quantity : II   C. Quantity : I < Quantity : II
D. Quantity : II ≥ Quantity : I   E. Quantity I = Quantity II or relation can't be established

Correct Answers:

1	2	3	4	5	6	7	8	9	10
A	A	C	E	C	A	C	C	E	E

Explanations:

1. **Quantity : I**

The sides of the square = $\sqrt{756.25}$ = 27.5 cm

The diagonal of the rectangle = $\dfrac{3 \times 27.5}{5}$ = 16.5 cm

Let length = l cm then breadth = (l – 3.3) cm

We know that, in a rectangle, diagonal^2 = l^2 + b^2

16.5 = $\sqrt{(l^2 + (l - 3.3)^2}$

272.25 = l^2 + (l – 3.3)^2

By solving, l = 13.2 cm

b = (13.2 – 3.3) = 9.9 cm

Area = l × b = 13.2 × 9.9 = 130.68 sq. cm

Quantity II : 125 sq. cm

Therefore, Quantity : I > Quantity : II

Hence, option A is correct.

2. Let the total number of students present in the school = a

Before lunch break, the total number of students remained = 80% of a = 0.8a

After lunch break, the total number of students remaining in the school = 80% of 0.8a = 0.64a

Quantity I : The reqd. % = $\dfrac{0.64a \times 100}{a}$ = 64%

Quantity II : 60 %

Therefore, Quantity : I > Quantity : II

Hence, option A is correct.

3. On Monday, let the low temperature = a degree Celsius and the height temperature = b degree Celsius

On Tuesday, let the low temperature = c degree Celsius and the height temperature = d degree Celsius

According to the question,

a + c = 26 × 2 = 52 degree Celsius --- (i)

b + d = 32 × 2 = 64 degree Celsius --- (ii)

Now, a = d and we need to determine (b – c)

Subtract equation (ii) by (i)

b + d – a – c = 64 – 52 = 12

a = d therefore, (b – c) = 12 degree Celsius

Therefore, Quantity : I < Quantity : II

Hence, option C is correct.

4. **Quantity I :** The total quantity of petrol he used = (6.5 – 1.25) = 5.25 litres

The mileage of the bike = 32 km per litre

The total distance he travelled with 5.25 litres petrol = 5.25 × 32 = 168 km

Quantity II : The total quantity of petrol he used = (7.25 – 3.75) = 3.5 litres

The mileage of the bike = 48 km per litre

The total distance he travelled with 3.5 litres petrol = 3.5 × 48 = 168 km

Therefore, Quantity : I = Quantity : II

Hence, option E is correct.

5. Let the efficiency of the pipe Q = a litres per minute

Then, the efficiency of pipe P = 120% of a = 1.2a litres per minute

According to the question,

$$\frac{6000}{a} - \frac{6000}{1.2a} = 24$$

By solving, a = $\frac{1000}{24}$ = $\frac{125}{3}$ litres per minute

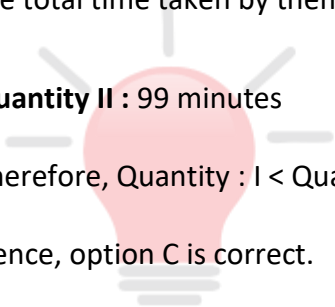The efficiency of pipe P = 120% of $\frac{125}{3}$ = 50 litres per minute

Quantity I : The efficiency of pipe P and Q together = $\frac{125}{3}$ + 50 = $\frac{275}{3}$ litres per minute

The total time taken by them to fill the tank of capacity 8800 litres = $\frac{8800}{275/3}$ = 96 minutes

Quantity II : 99 minutes

Therefore, Quantity : I < Quantity : II

Hence, option C is correct.

6. **Quantity I :**

Let, breadth of the park be 'b' m

So, 2 × (56 + b) = 192

112 + 2b = 192

2b = 80 ; b = 40

Required cost = 56 × 40 × 9 = Rs. 20160

Quantity II :

Reqd. cost = $\frac{22}{7}$ × 21 × 21 × 17 × 0.85 = Rs. 20027.7

So, Quantity I > Quantity II

Hence, option A is correct.

7. **Quantity I :** Total quantity of mixture = 80L

Quantity of mixture when 20L is taken out = 60L

Alcohol in 60 L mixture = $60 \times \dfrac{70}{100}$ = 42 L

Water in 60 L mixture = $60 \times \dfrac{30}{100}$ = 18 L

Total quantity of mixture after adding 15 L water = 75 L

New concentration of alcohol = $\dfrac{42}{75} \times 100$ = 56%

Quantity II : Present age of Shreya = 3x

Present age of Mira = 7x
Age of Shreya after 10 years = 3x + 10
Age of Mira 5 years ago = 7x – 5

So,

$\dfrac{3x + 10}{7x - 5} = \dfrac{5}{6}$; x = 5

Therefore, required sum 5 years hence = (10x + 10) = (50 + 10) = 60 years

So, Quantity I < Quantity II

Hence, option C is correct.

8. **Quantity I :** Quantity of milk in initial mixture = quality of milk in final mixture
$\dfrac{4}{5} \times 15$ = 12 litres

Let x litres of water be added
Quantity of water in final mixtures = x + 3 litres

Hence, milk – water ratio of final mixture = $\dfrac{12}{x + 3} = \dfrac{3}{2}$; x = 5 litres

So, Quantity I = 5 litres

Quantity II : Let the required quantity of initial mixture be 'x' litres

Final mixture = (x + 2) litres
Quantity of alcohol in initial mixture = Quantity of alcohol in final mixture
$\dfrac{2}{3} \times x = \dfrac{1}{2} \times (x + 2)$; x = 6 litres

So, Quantity II = 6 litres
Therefore, Quantity I < Quantity II
Hence, option C is correct.

9. **Quantity I:** Let, the age of Ram, Lakshman, Bharat and Shatrughan is represented as R, L, B and S

R + L + B + S = 108 years -----------(1)

According to the question,

$$\frac{R+2}{L+4} = \frac{9}{7}$$

7R = 9L + 22 --------------(2)

Also, $\frac{B-4}{S-6} = \frac{3}{2}$

2B – 3S = – 10 -----------(3)

L – S = 2 -----------------(4)

Using the above 4 equations, we get

B = 28 years

Therefore, the age of Bharat is 28 years

Quantity II : Let the age of five brothers Arjun, Bhim, Yudhisthir, Nakul and Sahadev is A, B, Y, N and S

A + B + Y + N + S = 150 years -----------(1)

So, according to the question,

$$\frac{A+5}{B-7} = \frac{7}{5}$$

=> 5A = 7B – 74 ------------(2)

Also, $\frac{Y}{N} = \frac{3}{2}$

2Y = 3N ---------(3)
Also, A – S = 2 -----------(4)
And, S = N + 4 -----------(5)

Using all the above five equations, S = 28 years
Therefore, the age Sahadev = 28 years

So, Quantity I = Quantity – II or No relation
Hence, option E is correct.

10.   **Quantity I:**

According to the given equations:

$x^2 - 24x + 143 = 0$

$x^2 - 13x - 11x + 143 = 0$

$x(x - 13) - 11(x - 13) = 0$

$(x - 11)(x - 13) = 0$

$x = 11, 13$

Quantity II :

$y^2 - 20y + 96 = 0$

$y^2 - 12y - 8y + 96 = 0$

$y(y - 12) - 8(y - 12) = 0$

$(y - 8)(y - 12) = 0$

$y = 8, 12$

So, Quantity I = Quantity II or relation can't be established

Hence, option E is correct.