
Bipin Nambiar
(SBI PO 2018)
Shiraz Khan
(SBI Clerk 2018)
Kuldeep Yadav
(SBI PO 2018)
Rajat Saxena
(IBPS Clerk 2018)
Anupam Tyagi
(IBPS PO 2018)
FRIENDS!
WE USED TESTZONE
AND CRACKED BANK EXAMS
बैंक परीक्षाओ के लिए निश्चित
रूप से सर्वश्रेष्ट मॉक
टेस्ट सीरीज
IT'S YOUR TURN NOW
TAKE A FREE MOCK TEST
Smartkeeda
The Question Bank

Maths Inequalities Questions for Bank and Insurance Exams

Maths inequalities Quiz 7

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. A motorboat can travel x km upstream and x + 20 km downstream in 17.5 hours. If the ratio of the speed of the motorboat in still water to the speed of stream is 3: 1 and the difference between their speed is 4 km.
Quantity I: What is the value of x?
Quantity II: How much distance the motorboat will travel downstream in 5 hours 15 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

---

2. Two persons, A and B together can do a piece of work in 15 days. B is 80% as efficient as A.
Quantity I: If they work on alternate day, starting with A then how many days will they take to complete 50% of the work?
Quantity II: How many days, B alone will take to complete 40% of the total work?

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. The speed of a 500 meters long train is 5 km per hour more than that of a car. If the car and the train travel in opposite direction then the car can cross the train completely in 1.5 minutes.
Quantity I: What is the speed of the train?
Quantity II: What will be the speed of car when it is increased by 50%?

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

---

4. In a mixture of Ghee and Dalda, the quantity of Dalda is 40% less than the quantity of Ghee. When 5 litres of pure Ghee were added then the quantity of Ghee becomes 80% more than the quantity of Dalda.
Quantity I: What is the quantity of Dalda in the mixture?
Quantity II: 40 litres

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. On 1st Jan 2018, the average age of a family of 5 members is 45 years. On 1st July 2018, one of the members of the family died. On 1st Jan 2019, the average age of the family will become 32 years.

Quantity I: At what age, did the person die?

Quantity II: 100 years

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. In a mixture of milk and water, the ratio of milk to water is 2 : y. When 4 litres of milk were added in the mixture then, the concentration of water becomes 50% but when 4 litres of water were added in the mixture then the concentration of milk becomes 33.33%.

Quantity I: Milk will be what part of the mixture when, 5 litres of milk were added in the original mixture?

Quantity II: Water will be what part of the mixture when 3 litres of water were added in the original mixture?

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

---

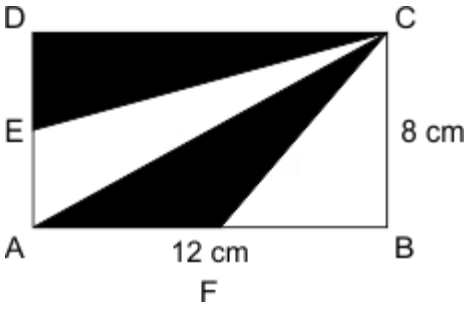
7. **Quantity I:** 'x' $x^2 - 10\sqrt{7}x + 168 = 0$

Quantity II : 'y' $y^2 - \sqrt{6}y - 72 = 0$

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

---

8. In the given rectangle, AB = 12 cm, CD = 8 cm. AF = FB and AE = ED.



Quantity I: What is the area of shaded region?

Quantity II : What is the area of unshaded region?

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. The efficiency of A is 25% more than that of B. And total work is 100 units.
Quantity I : Find the number of days B alone will take to complete 75% of the work?
Quantity II : Find the number of days A and B together will take to complete 150% of the work?

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:** A gave one-fifth of the amount he had to B. B in turn gave half of what he received from A to C. If the difference between the remaining amount with A and the amount received by C is Rs. 700, how much money did B receive from A?
Quantity II: Rs 250

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
C	A	A	C	A	C	A	E	A	C

Explanations:

1. Let the speed of the motorboat in still water = 3a km/hr then the speed of the motorboat in stream = a km/hr
According to the question, 3a – a = 2a = 4
a = 2 km/hr
the speed of the motorboat in still water = 3a km/hr = 6 km/hr
the speed of the motorboat in stream = a km/hr = 2 km per hour
Upstream speed = 6 – 2 = 4 km/hr
Downstream speed = 6 + 2 = 8 km per hour

$$\frac{x}{4} + \frac{x + 20}{8} = 17.5$$

$8x + 4x + 80 = 17.5 \times 32 = 560$
$12x = 560 - 80 = 480$
$x = 40$

Quantity I : 40
Quantity II :

$$\text{Distance} = \text{speed} \times \text{time} = \frac{8 \times 21}{4} = 42 \text{ km}$$

Therefore, Quantity I < Quantity II

Hence, option C is correct.

2. Let A's efficiency = 5x units then B's efficiency = 80% of 5x = 4x
Total work done by A and B together in 15 days = (5x + 4x) × 15 = 9x × 15 = 135x units
Quantity I:

$$50\% \text{ of the work} = \frac{135x}{2} = 67.5x$$

First day, A will do 5x units
2nd day, B will do 4x units
In the first 2 days, i.e. in one cycle 5x + 4x = 9x units
In 7 cycle i.e. 14 days 9x × 7 = 63x units
Remaining = 67.5x – 63x = 4.5x units
That A will do in approximately 1 day
Total number of days = 14 + 1 = 15 days approximately

Quantity II: 40% of the work = 40% of 135x

$$= 40 \times \frac{135x}{100} = 54x$$

B alone will take, $\frac{54x}{4x}$ = 13.5 days

Therefore, Q1 > Q2
Hence, option A is correct.

3.

Let the speed of the car = x km per hr = $x \times \frac{5}{18}$ m/s

The speed of the train = x + 5 km/hr = $(x + 5) \times \frac{5}{18}$ m/s

If they travel in opposite direction then the relative speed = (x + x + 5) km per hr
= $(2x + 5) \times \frac{5}{18}$ m/s

We know that, distance = speed × time
$500 = (2x + 5) \times \frac{5}{18} \times 90$
2x + 5 = 20
x = 7.5 km per hour

Quantity I :
The speed of the train = x + 5 = 12.5 km per hr

Quantity II :
150% of 7.5 = $\frac{150 \times 7.5}{100}$ = 11.25 km per hour
Therefore, Quantity: I > Quantity : II
Hence, option A is correct.

4. Let the quantity of Ghee = 10x litres then the quantity of Dalda = (100 – 40)% of 10x = 60% of 10x = 6x litres
When 5 litres of Ghee was added then the quantity of Ghee = 10x + 5 litres and the quantity of Dalda = 6x litres

According to the question,
180% of 6x = (10x + 5)
10.8x = 10x + 5
0.8x = 5
8x = 50
x = 6.25 litres
Quantity I :
The quantity of Dalda = 6x = 6 × 6.25 = 37.5 litres
Therefore, Quantity : I < Quantity : II
Hence, option C is correct.

5. On 1st Jan 2018, the sum of the age of 5 members = 45 × 5 = 225 years
On 1st Jan 2019, the sum of the age of 4 members = 32 × 4 = 128 years
So, on 1st Jan 2018 the sum of the age of 4 members = 31 × 4 = 124 years
So, on 1st Jan 2018 the age of the person who died on 1st July 2018 = (225 – 124) = 101 years
The age of person when he died = (101 + 0.5) = 101.5 years
Therefore, Quantity : I > Quantity : II
Hence, option A is correct.

6. Let the quantity of milk = 2x litres then the quantity of water = yx litres
According to the question,
$yx = 50\%$ of $(2x + yx + 4)$
$2yx = 2x + yx + 4$
$yx = 2x + 4$ ..... (i)
$2x = 33.33\%$ of $(2x + yx + 4)$
$6x = 2x + yx + 4$
$yx = 4x - 4$ ..... (ii)
From the equation (i) and (ii)
$2x + 4 = 4x - 4$
$2x = 8$
$x = 4$
Put the value of x in the equation (i)
$y = 3$
The quantity of mil in the original mixture = 2x = 8 litres and the quantity of water = yx = 3 × 4 =12 litres
Quantity I : when, 5 litres of milk were added in the original mixture

$$\text{milk} = \frac{8+5}{12+8+5} = \frac{13^{th}}{25} \text{ part}$$

Quantity II: when 3 litres of water were added in the original mixture

$$\text{water} = \frac{12+3}{12+8+3} = \frac{15}{23}$$

Therefore, Quantity : I < Quantity : II, Hence, option C is correct.

7. **Quantity I:**

$x^2 - 10\sqrt{7}x + 168 = 0$
$x^2 - 4\sqrt{7}x - 6\sqrt{7}x + 168 = 0$
$x(x - 4\sqrt{7}) - 6\sqrt{7}(x - 4\sqrt{7}) = 0$
$(x - 4\sqrt{7})(x - 6\sqrt{7}) = 0$
$x = 4\sqrt{7}, 6\sqrt{7}$

Quantity II:
$y^2 - \sqrt{6}y - 72 = 0$
$y^2 + 3\sqrt{6}y - 4\sqrt{6}y - 72 = 0$
$y(y + 3\sqrt{6}) - 4\sqrt{6}(y + 3\sqrt{6}) = 0$
$(y + 3\sqrt{6})(y - 4\sqrt{6}) = 0$
$y = -3\sqrt{6}, 4\sqrt{6}$
For $x = 4\sqrt{7}$, or $6\sqrt{7}$ and $y = -3\sqrt{6}$, or $4\sqrt{6}$ $x > y$

Therefore, x > y
Hence, option A is correct.

8.

$AE = ED = \frac{8}{2} = 4$ cm

$AF = FB = \frac{12}{2} = 6$ cm

Area of $BFC = \frac{1}{2} \times 8 \times 6 = 24$ sq. cm

Area of $ACB = \frac{1}{2} \times 12 \times 8 = 48$ sq. cm

Area of $DEC = \frac{1}{2} \times 12 \times 4 = 24$ sq. cm

Area of $DAC = \frac{1}{2} \times 12 \times 8 = 48$ sq. cm

Quantity I : Area of shaded region = area of DEC + area of acf = 24 + (48 – 24) = 48 sq. cm
Quantity II : Area of unshaded region = area of rectangle – area of shaded region = 96 – 48 = 48 sq. cm

Therefore, Quantity I = Quantity II
Hence, option E is correct.

9. The ratio of the efficiency of A and B = 5 : 4

The total units of work = 100 units then the number of days, A will take
$= \frac{100}{5} = 20$ days

and the number of days, B will take
$= \frac{100}{4} = 25$ days

Quantity I: 75% of the work = 75% of 100 = 75 units
The number of days, B alone will take = $\frac{75}{4} = 18.75$ days

Quantity II: 150% of the work = 150 units

The number of days, A and B together will take to complete

$= \frac{150}{5+4} = \frac{150}{9} = 16.67$ days

Therefore, Quantity I > Quantity II
Hence, option A is correct.

10. **Quantity I:**
Suppose initially A had Rs. x
Then, amount received by B = Rs. (x/5)
Amount remaining with A = Rs. $x - \frac{x}{5}$ = Rs. $\frac{4x}{5}$

Amount received by C = Rs. $\left(\frac{1}{2} \times \frac{x}{5}\right)$ = Rs. $\frac{x}{10}$

Since, $\left(\frac{4x}{5} - \frac{x}{10}\right) = 700$

$\Rightarrow 7x = 700 \times 10$
$\Rightarrow x = 1000.$

Hence, amount received by B = Rs. $\frac{x}{5}$ = Rs. 200

Quantity II : Rs 250

Here we can see Quantity II is more than Quantity I,
Hence option C is right answer.