Quiz Date: 23rd March 2020

Directions (1-5): In the given questions, two quantities are given, one as Quantity I and another as Quantity II. You have to determine relationship between two quantities and choose the appropriate option

Q1. Two buses A and B starts to move each other from P and Q. Distance between P and Q is 280 km. Max speed of Bus A and Bus B is 40 km/hr and 30 km/hr
Quantity I: Time taken by the bus to cross each other
Quantity II: Time taken by Car 'Z' to cover 160 km distance at a speed of 40km/hr.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

Q2. 'A' can complete a work alone in 12 days. A and B together can complete the work in $6\frac{2}{3}$ days. C takes 5 more days than B to complete the work alone. C is 50% more efficient than D.
Quantity I= 'x': A, B and C worked for alternate days starting from A and finish the work in 'x' days
Quantity II= 'y': B and C worked together for 6 days and left and then D completes the remaining work. 'y' is total time taken to complete the work.
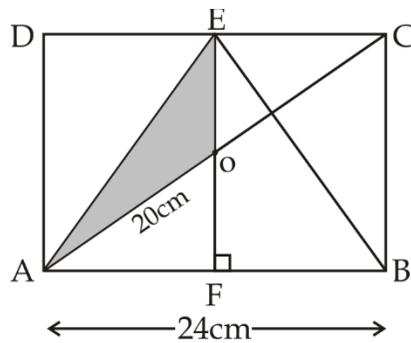(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

Q3. Quantity I= 'x': A shopkeeper mark up an article 40% above its cost price. At the time of sale, he gave 20% discount. By this, shopkeeper earn Rs 168. 'x' is the difference between mark up price and cost price.
Quantity II='y' : Satish invested Rs.12000 in scheme 'A' at 12% S.I P.A. for 4 years and Rs.25,000 in scheme B at 11% S.I P.A for 2 year. 'y' is the difference between the interest earn from both schemes.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

Q4. ABCD is a rectangle and O is the midpoint of the line EF and diagonal AC. AO=20cm and AB=24cm

Quantity I: Area of shaded region
Quantity II: 98 cm^2
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

Q5. Quantity I= 'x': Veer distributed Rs.80,000 among his wife, two daughter and three sons. His wife got 300% more than the amount every son got. If 30% of the total amount given to the sons then 'x' is the amount every daughter got
Quantity II= 'y': Yogesh start a business with Rs 10800. After 4 months veer join him with Rs 37800. After 2 months Amit join them with Rs 28800. After 1 year they got total Rs 54880 as profit. 'y' is the share of Yogesh in profit.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

Direction (6 – 10): In the given questions, two quantities are given, one as 'Quantity I' and another as 'Quantity II'. You have to determine relationship between two quantities and choose the appropriate option:

Q6. Quantity I –Vessel A contains (Q + 36) liter mixture of milk & water in the ratio of 7 : 2, while vessel B contains (2Q + 42) liter mixture of milk & water in the ratio of 2 : 3. If 40% & 46% of mixture from vessel A and B taken out respectively, then remaining mixture in vessel B is 150% of remaining mixture in vessel A. Find the total initial quantity of milk in mixture of vessel A & vessel B together?
Quantity II – Two vessels contains mixture of mango juice and orange juice in the ratio of 5 : 3 and 5 : 4 respectively. If 40 liter mixture from first vessel taken out and mixed in second vessel, so new ratio of mango juice and orange juice in second vessel becomes 25 : 19. Find initial quantity of mixture in second vessel?
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II

(e) Quantity I = Quantity II or no relation

Q7. The ratio between radius of a sphere ball and a cylinder is 6 : 7 and that of between radius & height of cylinder is 7 : 4.
Quantity I – Ratio between volume of cylinder and volume of sphere ball.
Quantity II – Ratio between surface area of sphere and total surface area of cylinder.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or no relation

Q8. Quantity I – Center of semicircle B is O_1 and radius is 28 cm. find area of shaded figure. BO1 is perpendicular to AC
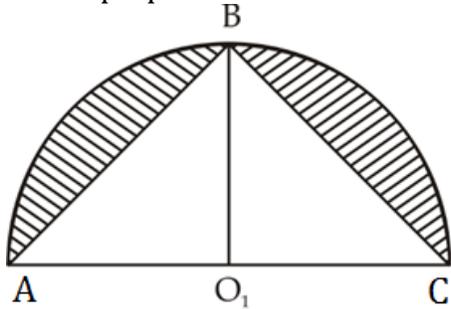
Quantity II – Length of a rectangle is two times of side of square, while ratio between side of square to breadth of rectangle is 8 : 7. If perimeter of rectangle is 28 cm more than perimeter of square, then area of rectangle.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or no relation

Q9. Quantity I – Veer invested some amount in scheme A, which offers CI at 20% p.a., and equal amount in scheme B which offers SI at 25% pa. If difference between SI and CI received in 3rd year is Rs. 385, find sum invested in each scheme?
Quantity II – Veer, Sameer & Neeraj enter into a business by making investment in the ratio of 9 : 11 :13 respectively. If at the end of one year they got a total profit of Rs. 51150 Rs., then find the profit share of Neeraj?
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or no relation

Q10. Quantity I – Coaching teacher asked a question to three students A, B & C and probability of question not being answered by three students is 0.5, 0.4, 0.7 respectively. Find the probability that at most two students will solve the question.
Quantity II – A bag contains 5 green balls & 7 red balls, if three balls drawn at random from bag, then find probability of getting at least 1 green ball.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or no relation

Q11. If diameter of the hemispherical bowl is same as that of the cylindrical vessel, height of cylindrical vessel is $66\frac{2}{3}$% of its radius, then the volume of the hemispherical bowl is what percent of that the cylindrical vessel
(a) 60% of the cylindrical vessel
(b) 80% of the cylindrical vessel
(c) 100% of the cylindrical vessel
(d) 50% of the cylindrical vessel
(e) none of these

Q12. A cistern can be filled by two pipes filling separately in 15 and 25 minutes respectively. Both pipes are opened together for a certain time but being clogged, only $\frac{5}{6}$ of full quantity water flows through the former and only $\frac{5}{8}$ through the latter pipe. The obstructions, however, being suddenly removed, the cistern is filled in 5 minutes from that moment. How long was it before the full flow began?
(a) $\frac{161}{29}$ minutes
(b) $\frac{168}{29}$ minutes
(c) $\frac{148}{29}$ minutes
(d) $\frac{120}{29}$ minute
(e) none of these

Q13. A garment company declared 12% discount for wholesale buyers. Mr Mohan bought garments from the company for Rs 8800 after getting discount. He fixed up the selling price of garments in such a way that he earned a profit of 4% on original company price. What is the approximate total selling price?
(a) Rs 10400
(b) Rs 14000
(c) Rs 10800
(d) Rs 12800
(e) None of these

Q14. There are 10 compartments in passenger train which carries on an average 20 passengers per compartment. If at least 12 passengers were sitting in each compartment and no any compartment has equal number of passengers then maximum how many passengers can be accommodated in any compartment:
(a) 64
(b) 45
(c) 56
(d) 48
(e)none of these

Q15. Ram completes 60% of a task in 15 days and then takes the help of Rahim and Rachel. Rahim is 50% as efficient as Ram is and Rachel is 50% as efficient as Rahim is. In how many more days will they complete the work?
(a) 121/3
(b) 51/3
(c) 55/3
(d) 65/3
(e) 40/7

Solutions

S1. Ans.(c)
Sol.
Quantity I: Minimum time taken by the bus to cross each other
$= \frac{280}{40+30} = 4$ hr
t ≥ 4 hr
Quantity II: Required time $= \frac{160}{40} = 4$ km
Quantity I ≥ Quantity II

S2. Ans.(e)
Sol.
A can complete work in= 12 days
'B' 1 day work is $= \frac{3}{20} - \frac{1}{12} = \frac{9-5}{60} = \frac{4}{60}$
B can complete the work in $= \frac{60}{4} = 15$ days
C can complete the work in '20' days
D can complete the work in $\frac{20 \times 150}{100} = 30$ days
Quantity I : 'A + B + C three days' work $= \frac{1}{12} + \frac{1}{15} + \frac{1}{20}$
$= \frac{5+4+3}{60} = \frac{12}{60}$
$= \frac{1}{5}$
'A + B + C' can complete the work in total '15 days
Quantity II :- Remaining work for D

$$= 1 - \frac{6}{15} - \frac{6}{20}$$

$$= \frac{60 - 24 - 18}{60} = \frac{3}{10}$$

$\frac{3}{10}$ of work is completed by D in $\frac{30 \times 3}{10}$ = 9days

Total time = 6 + 9 = 15 days

Quantity I = Quantity II

S3. Ans.(a)
Sol.
Quantity I: let C.P = 100
Mark Up price = 140
Selling price $= 140 \times \frac{80}{100} = 112$
ATQ,
12 → 168
x = 40 → 560
x = 560
Quantity II: Interest from scheme A $= \frac{12000 \times 12 \times 4}{100} = 5760$

Interest from scheme B $= \frac{25000 \times 11 \times 2}{100} = 5500$

y= 5760 – 5500 = 260
x > y
Quantity I > Quantity II

S4. Ans.(b)
Sol.
Quantity I:
OF $= \sqrt{20^2 - 12^2} = \sqrt{400 - 144} = \sqrt{256} = 16$
Area of shaded region
Area of ΔAFE – Area of Δ AFO
$= \frac{1}{2} \times 12 \times 32 - \frac{1}{2} \times 12 \times 16$
= 192 – 96 = 96 cm²
Quantity II > Quantity I

S5. Ans.(a)
Sol.
Quantity I:
 Total amount sons got $= \frac{30}{100} \times 80000 = 24000$
Each son got $= \frac{24000}{3} = 8000$
Wife got $= 8000 \times \frac{400}{100} = 32000$
Total amount daughters got
80,000 – 24000 – 32000

= 24000

Each daughter got $= \frac{24000}{2} = 12000$

x = 12,000

Quantity II:

Ratio of investment or profit= 10800 × 12 : 37800 × 8 : 28800 × 6

= 3 : 7 : 4

Share of Yogesh in profit $= \frac{54880}{14} \times 3$

y = 11760

x > y

Quantity I > Quantity II

S6. Ans(b)

Sol.

Quantity I –

ATQ –

$(Q + 36) \times \frac{60}{100} \times \frac{150}{100} = [(2Q + 42) \times \frac{54}{100}]$

3(60Q + 2160) = 2 (108Q + 2268)

180Q + 6480 = 216Q +4536

36Q = 1944

Q = 54 l

Total initial quantity of milk in mixture of vessel A & vessel B

$= (54 + 36) \times \frac{7}{9} + (2 \times 54 + 42) \times \frac{2}{5}$

= 70 + 60

= 130 l

Quantity II –

ATQ –

Let mixture of mango juice and orange juice in second vessel be 5y liter and 4y respectively

$\frac{5y+40\times\frac{5}{8}}{4y\times40\times\frac{3}{8}} = \frac{25}{19}$

$\frac{5y+25}{4y+15} = \frac{25}{19}$

19y + 95 = 20y + 75

y = 20 l

Initial quantity of mixture in second vessel $= 20 \times 9 = 180 \, l$

Quantity I < Quantity II

S7. Ans(b)

Sol.

Ratio between radius of sphere ball, cylinder and height of cylinder = 6 : 7 : 4

Let radius of sphere ball, cylinder and height of cylinder be 6x , 7x & 4x respectively

Quantity I –

Required ratio $= \frac{\pi \times 4x \times (7x)^2}{\frac{4}{3}\pi\,(6x)^3}$

$= \frac{49}{72}$

Quantity II –

Required ratio = $\dfrac{4\pi(6x)^2}{2\pi7x(7x+4x)}$

$= \dfrac{72}{77}$

Quantity I < Quantity II

S8. Ans(e)
Sol.
Quantity I –

Area of semicircle – area of triangle

$= \dfrac{22}{7} \times \dfrac{28 \times 28}{2} - \dfrac{1}{2} \times 56 \times 28$

= 1232 – 784

= 448 cm²

Quantity II –

Ratio of Length, breadth of a rectangle & side of square = 16 : 7 : 8

Let Length, breadth of a rectangle & side of square be 16x cm, 7x cm & 8x cm respectively

ATQ –

2(16x + 7x) – 4 × 8x = 28 cm

46x – 32x = 28

x = 2 cm

Area of rectangle = (16 × 2) × (2 × 7) = 448 cm²

Quantity I = Quantity II

S9. Ans(b)
Sol.
Quantity I –

Let veer invested Rs. P in both schemes

ATQ –

$\dfrac{P\times3\times25}{100} - P[\left(1+\dfrac{20}{100}\right)^3 - 1]$ = 385

$\dfrac{3P}{4} - \dfrac{91P}{125}$ = 385

$\dfrac{375P-364P}{500}$ = 385

11P = 192500

P = 17500 Rs.

Quantity II –

Profit of Neeraj = $51150 \times \dfrac{13}{33}$

= 20150 Rs.

Quantity I < Quantity II

S10. Ans(a)
Sol.
Quantity I –

Probability of at most two students will solve the question
= 1 – probability of all three students will solve the question
= 1 – (0.5) × (0.6) × (0.3)
= 1 – 0.09
= 0.91
Quantity II –
Total balls = 5 + 7 = 12
Probability of getting at least 1 green ball = $1 -$ probability of no green
$$= 1 - \frac{7}{44}$$
$$= \frac{37}{44} \approx 0.84$$

Quantity I > Quantity II

S11. Ans.(c)
Sol. let height of cylindrical vessel = h
So, radius of bowl = $\frac{3}{2}$ h = radius of vessel

Volume of hemisphere = $\frac{2}{3} \pi r^3$

Required percentage
$$= \frac{\frac{2}{3}\pi\left(\frac{3}{2}h\right)^3}{\pi\left(\frac{3}{2}h\right)^2 \times h} \times 100$$
= 100%

S12. Ans. (b)
Sol.   Total per minute fill by both pipes = $\frac{1}{15} + \frac{1}{25} = \frac{8}{75}$
total per minute fill, when pipes are clogged = $\frac{5}{6} \times \frac{1}{15} + \frac{5}{8} \times \frac{1}{25} = \frac{29}{360}$
let the pipes were clogged for x minutes
work done after removing the obstruction = $5 \times \frac{8}{75} = \frac{40}{75}$
work done during the obstruction = $1 - \frac{40}{75} = \frac{35}{75}$
per minute work during obstruction = $\frac{29}{360}$
no. of minutes of obstruction = $\dfrac{\frac{35}{75}}{\frac{29}{360}} = \dfrac{168}{29}$ minute

S13. Ans. (a)
Sol.   Original company price = $\frac{100}{88} \times 8800$ = Rs 10000
SP to have 4% profit = $\frac{104}{100} \times 10000 = 10400$ Rs

S14. Ans.(c)
Sol.   Total passengers = 20 × 10 = 200

Max no. of passengers in a compartment
= 200 − (12+13+14+15+16+17+18+19+20)
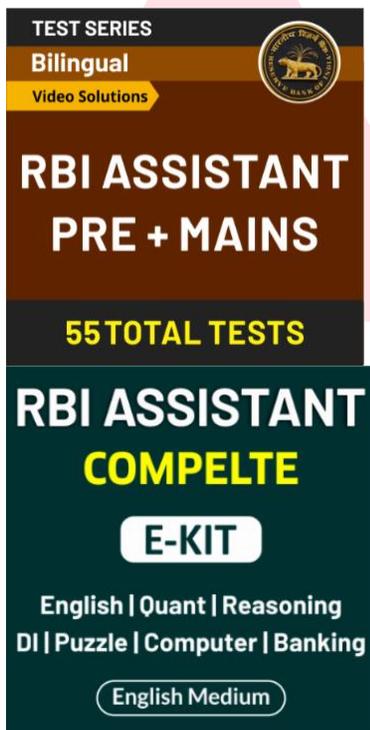= 56

S15. Ans.(e)

Sol.   Per day work of Ram = $\frac{1}{25}$

Per day work of Rahim = $\frac{1}{50}$

Per day work of Rachel = $\frac{1}{100}$

Per day work of all 3 together = $\frac{1}{25} + \frac{1}{50} + \frac{1}{100}$

$= \frac{7}{100}$

No. of days to complete remaining work = $\frac{\frac{2}{5}}{\frac{7}{100}} = \frac{40}{7}$ days

$= 5\frac{5}{7}$ days

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