

Banking Daily Quiz Blog - February 8



1. Read the instruction carefully and answer the questions based on it.

Determine the relationship between (x) and (y) ?

A. $4x^2 + 8x + 3 = 0$
 $2y^2 + 3y + 1 = 0$

A $x > y$

B $y > x$

C $x \geq y$

D $x \leq y$

E $x = y$ or no relationship can be determined.

Solution

$$4x^2 + 8x + 3 = 0$$

$$4x^2 + 2x + 6x + 3 = 0$$

$$2x(2x + 1) + 3(2x + 1) = 0$$

$$(2x + 3)(2x + 1) = 0$$

$$x = -\frac{1}{2}, -\frac{3}{2}$$

$$2y^2 + 3y + 1 = 0$$

$$2y^2 + 2y + y + 1 = 0$$

$$2y(y + 1) + 1(y + 1) = 0$$

$$2y(y + 1) + 1(y + 1) = 0$$

$$(2y + 1)(y + 1) = 0$$

$$y = -\frac{1}{2}, -1$$

Hence, No relationship between x and y can be determined.

B. $9x^2 - 9x + 2 = 0$

$$9y^2 - 18y + 8 = 0$$

A $x > y$

B $y > x$

C $x \geq y$

D $x \leq y$

E $x = y$ or no relationship can be determined.

Solution

$$9x^2 - 9x + 2 = 0$$

$$9x^2 - 3x - 6x + 2 = 0$$

$$3x(3x - 1) - 2(3x - 1) = 0$$

$$(3x - 2)(3x - 1) = 0$$

$$x = \frac{2}{3}, \frac{1}{3}$$

$$9y^2 - 18y + 8 = 0$$

$$9y^2 - 12y - 6y + 8 = 0$$

$$3y(3y - 4) - 2(3y - 4) = 0$$

$$3y(3y - 4) - 4(3y - 4) = 0$$

$$(3y - 2)(3y - 4) = 0$$

$$y = \frac{2}{3}, \frac{4}{3}$$

Hence, $x \leq y$

c. $49x^2 + 14x - 3 = 0$

$$49y^2 + 56y + 15 = 0$$

A $x > y$

B $y > x$

C $x \geq y$

D $x \leq y$

E $x = y$ or no relationship can be determined.

Solution

$$49x^2 + 14x - 3 = 0$$

$$49x^2 + 21x - 7x - 3 = 0$$

$$7x(7x + 3) - 1(7x + 3) = 0$$

$$(7x - 1)(7x + 3) = 0$$

$$x = \frac{1}{7}, -\frac{3}{7}$$

$$49y^2 + 56y + 15 = 0$$

$$49y^2 + 35y + 21y + 15 = 0$$

$$7y(7y + 5) + 3(7y + 5) = 0$$

$$(7y + 3) + 5(7y + 5) = 0$$

$$(7y + 3)(7y + 5) = 0$$

$$y = -\frac{3}{7}, -\frac{5}{7}$$

Hence, $x \geq y$

D. $x^3 = 512$

$$2y^2 = 128$$

A $x > y$

B $y > x$

C $x \geq y$

D $x \leq y$

E $x = y$ or no relationship can be determined.

Solution

$$x^3 = 512$$

$$x^3 = 8^3$$

$$x = 8$$

$$2y^2 = 128$$

$$y^2 = \frac{128}{2}$$

$$y^2 = 64$$

$$y = \sqrt{64}$$

$$y = \pm 8 \text{ or } -8$$

$$y = -\frac{4}{3}, -\frac{5}{3}$$

Hence, $x \geq y$

E. $16x^2 + 16x + 3 = 0$

$$9y^2 + 27y + 20 = 0$$

A $x > y$

B $y > x$

C $x \geq y$

D $x \leq y$

E $x = y$ or no relationship can be determined.

Solution

$$16x^2 + 16x + 3 = 0$$

$$16x^2 + 4x + 12x + 3 = 0$$

$$4x(4x + 1) + 3(4x + 1) = 0$$

$$(4x + 3)(4x + 1) = 0$$

$$x = -\frac{3}{4}, -\frac{1}{4}$$

$$9y^2 + 27y + 20 = 0$$

$$9y^2 + 15y + 12y + 20 = 0$$

$$3y(3y + 5) + 4(3y + 5) = 0$$

$$(3y + 4)(3y + 5) = 0$$

$$y = -\frac{4}{3}, -\frac{5}{3}$$

Hence, $x > y$

2. Area of a square is equal to the area of a rectangle and length of the rectangle is 8 cm more than the side of the square. Find the perimeter of the rectangle if the breadth of the rectangle is 6 cm less than the side of the square?

A 200 cm

B 150 cm

C 120 cm

D 80 cm

E 100 cm

Solution

Let the side of the square be x cm

Then the length of the rectangle will be $= (x + 8)$ cm

Breadth of the rectangle will be $= (x - 6)$ cm

So, As per question,

$$x^2 = (x + 8) \times (x - 6)$$

$$x = 24 \text{ cm}$$

length of the rectangle $= 32 \text{ cm}$

and breadth of the rectangle $= 18 \text{ cm}$

and breadth of the rectangle = 10 cm

$$\text{perimeter of the rectangle} = 2(l + b) = 100 \text{ cm}$$

3. **There are some students in the class and number of chocolates received by each student is one-sixths of the total students in the class. If the number of students in the class becomes one-third then each students gets 27 chocolates. Find the total number of chocolates distributed in the class.**

A 380

B 582

C 162

D 486

E 108

Solution

Let the number of students in the class be x

Number of chocklate received by each student will be = $\frac{x}{6}$

So, As per question,

$$x \times \frac{x}{6} = \frac{x}{3} \times 27$$

$$\frac{x^2}{6} = 9x$$

$$x = 54$$

Hence, total number of chocklates will be,

$$x \times \frac{x}{6} = 54 \times \frac{54}{6} = 54 \times 9 = 486$$

4. Two trains running at 93 km/h and 57 km/h respectively in same direction cross each other in 18 seconds then find the time taken to cross each other when running in opposite directions.

A $4\frac{8}{25}$ seconds

B $4\frac{6}{25}$ seconds

C $5\frac{8}{25}$ seconds

D $5\frac{6}{25}$ seconds

E $6\frac{8}{25}$ seconds

Solution

Speed of first train = 93 Km/Hr.

Speed of second train = 57 Km/Hr.

As per question,

Time taken will be,

$$\frac{(93-57) \times \frac{5}{18} \times 18}{}$$

$$(93+57) \times \frac{5}{18}$$
$$= \frac{180}{\frac{125}{3}} = \frac{108}{25} = 4\frac{8}{25} \text{ seconds}$$

5. A and B entered into a partnership by investing Rs 10800 and Rs 18900 respectively. After 6 months, C joined them with an amount of Rs 16200 and at the end of the year profit share of C is Rs 21000 then find the total profit.

A Rs. 90000

B Rs. 96000

C Rs. 102000

D Rs. 84000

E Rs. 98000

Solution

Profit share ratio of A, B and C will be,

$$A : B : C = 10800 \times 12 : 18900 \times 12 : 16200 \times 6$$

$$4 : 7 : 3$$

As per question,

$$3's = 21000$$

So,

$$\text{Total profit} = 14's = \frac{21000}{3} \times 14 = \text{Rs. } 98000$$

6. **Five years ago, age of A's mother is 3.5 times of the age of A at that time and 10 years hence ratio of age of A's mother to that of A is 2 : 1. Find the sum of present age of A and his mother.**

A 40 years

B 55 years

C 45 years

D 50 years

E 60 years

Solution

Let age of A, 5 years ago is x years

Then age of his mother 5 years ago = $3.5x$ years

So,

Present age of A will be $x + 5$ years

Present age of A's mother will be $3.5x + 5$ years

Hence, As per question,

$$\frac{3.5x+5+10}{x+5+10} = \frac{2}{1}$$
$$\frac{3.5x+15}{x+15} = \frac{2}{1}$$

$$x+15 - 1$$
$$3.5x + 15 = 2x + 30$$

$$1.5x = 15$$

$$x = 10 \text{ years}$$

Hence, Sum of present age of A and A's mother will be,

$$x + 5 + 3.5x + 5 = 4.5x + 10 = 45 + 10 = 55 \text{ years}$$

7. Amount received on a certain sum when compounded annually for 2 years at $R\%$ per annum is Rs 6480 and that of in three years at the same rate of interest is Rs 7776. Find the sum.

A Rs. 4200

B Rs. 5000

C Rs. 4800

D Rs. 4000

E Rs. 4500

Solution

Let the principal is = Rs. x

So, for 2 years (1)

$$6480 = P \times \left(1 + \frac{R}{100}\right)^2$$

For 3 years

$$7776 = P \times \left(1 + \frac{R}{100}\right)^3 \dots\dots\dots (2)$$

Now, (2) \div (1),

$$\left(1 + \frac{R}{100}\right) = \frac{7776}{6480}$$

$$\frac{R}{100} = \frac{7776}{6480} - 1$$

$$\frac{R}{100} = \frac{1296}{6480}$$

$$R = \frac{1296 \times 100}{6480} = 20\%$$

Hence, putting the value of %R in (1),

$$P = \frac{6480}{\left(1 + \frac{20}{100}\right)^2}$$

$$P = Rs. \frac{6480}{\left(\frac{6}{5}\right)^2}$$

$$P = Rs. 4500$$

8. A alone can do a work in 40 days and ratio of efficiency of B to that of A is 5 : 4. If A started and worked for 15 days and left then in how many days will B do the remaining work.

A 10 days

B 28 days

C 30 days

D 20 days

E 25 days

Solution

Let the one-day work of A is $= 4x$

Let the one-day work of B is $= 5x$

So,

Total work will be,

$$40 \times 4x = 160 \text{ units}$$

As per question,

Work done by A in 15 days will be $= 15 \times 4x = 60x \text{ units}$

Hence, remaining work will be $160x - 60x = 100 \text{ units}$

Hence, Number of days taken by B will be,

$$\frac{100x}{5x} = 20 \text{ days}$$

9. In an election of two candidates, 15% of votes cast were declared invalid. The winner got 60% of the valid votes and defeats the loser by 1700 votes. How many votes were cast in total?

A 12000

B 10000

C 8000

D 9800

E 15000

Solution

Let the total votes casted is $100x$

So, Number of invalid votes will be $\frac{15}{100} \times 100x = 15x$

So, valid votes will be $100x - 15x = 85x$

As per question,

Number of votes of winner will be $\frac{60}{100} \times 85x = 51x$

Number of votes of loser will be $\frac{40}{100} \times 85x = 34x$

Hence,

$$51x - 34x = 1700$$

$$17x = 1700$$

$$x = 100$$

Hence, total votes casted will be $100x = 100 \times 100 = 10000$

10. **A sells his watch at 20% profit to B while B sales it to C at a loss of 15%. If C pays Rs. 2550. Find at what price A sold watch to B?**

A Rs. 3000

B Rs. 3500

C Rs. 2000

D Rs. 2500

E Rs. 2800

Solution

Let the cost price of watch for A is $100x$

So, CP for B will be $= 100x + \frac{20}{100} \times 100x = 120x$

So, CP for C will be $120x - \frac{15}{100} \times 120x = 120x - 18x = 102x$

Hence,

$$102x = 2550$$

$$x = 25$$

Hence, A sold watch to B at $120x = (120 \times 25) = \text{Rs. } 3000$

11. In an alloy 'A', zinc & copper is in the ratio of 1 : 1. In the second alloy 'B', the same element are in the ratio 3 : 5. If these two alloys mixed to form a new alloy in which zinc and copper is in the ratio 2 : 3, find the ratio in which alloy 'A' and alloy 'B' are mixed?

A 2:3

B 1:4

C 3:2

D 4:1

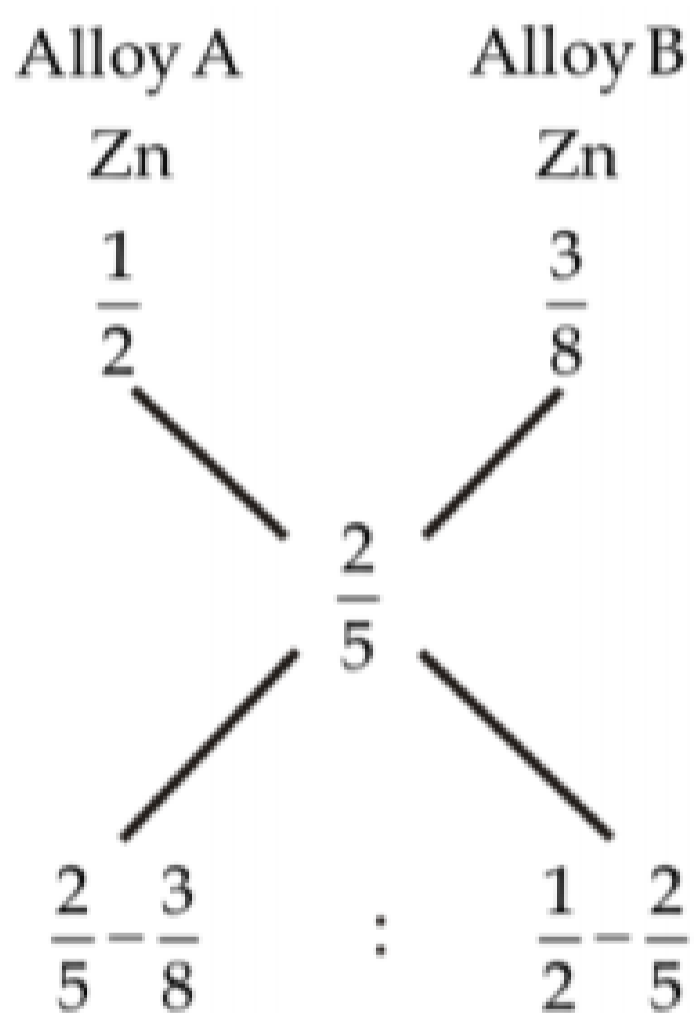
E 2:5

Solution

As per data given in the question,

Using the concept of Alligation,

We will get,



Hence, ratio of A and B will be,

$$\left[\frac{2}{5} - \frac{3}{8} \right] : \left[\frac{1}{2} - \frac{2}{5} \right]$$

$$\left[\frac{16-15}{40} \right] : \left[\frac{5-4}{10} \right]$$

$$\frac{1}{40} : \frac{1}{10}$$

$$1 : 4$$

