Class X Pre First Term Test

Pair Of linear equations in two variables

1. The values of p for which the following systems of equations have exactly one solution: i) $px+2y=5$, $3x+y=1$ ii) $9x+py-1=0$, $3x+4y-2=0$

a) $p \neq 6, p \neq 9$ b) $p \neq 6, p \neq 12$ c) $p \neq -6, p \neq 12$ d) $p \neq 6, p \neq -9$

2. The system of equations $6x-y=3;\quad 7x+4y=9$ has a common solution for

a) $x=\frac{21}{31}, y=\frac{33}{31}$ b) $x=\frac{33}{31}, y=\frac{21}{31}$ c) $x=\frac{13}{31}, y=\frac{11}{31}$ d) $x=\frac{11}{31}, y=\frac{31}{31}$

3. Determine the pair of linear equations from the three given equations. Which has infinite number of solutions:

i) 2x +3y = 5 ii) y + $^{3}/_{2}$ x =5 iii) 4x + 6y = 10

a) i & ii b) i & iii c) ii & iii d) None of these

4. Coordinates of the vertices of the triangle formed by the following equations: y= x, y = -x and 2x+3y = -5 is

a) (-1, 1), (0,0), (-5, 5) b) (-1, -1), (0,0), (5, -5)

c) (1, -1), (0,0), (5, -5) d) None of these

5. Values of x and y for which the following equations are satisfied are

$$\frac{7x-2y}{xy}=5; \frac{8x+7y}{xy}=15$$

a) (2, -2) b) (1,1) c) (3,-3) d) (4,3)

6. If Ritu can row downstream 20 km in 2 hours, and upstream 4 km in 2 hours, then her speed of rowing in still water and the speed of the current is

a) Speed of rowing in still water: 10 km/hr and the speed of the current: 5 km/hr.

b) Speed of rowing in still water: 8 km/hr and the speed of the current: 7 km/hr.

c) Speed of rowing in still water: 18 km/hr and the speed of the current: 12 km/hr.

d) Speed of rowing in still water: 6 km/hr and the speed of the current: 4 km/hr

ANSWER Q 7 TO Q 9 ON THE BASIS OF THE FOLLOWING INFORMATION

It is known that in an embroidery shop, 2 women and 5 men can together finish an embroidery work in 4 days, while 3 women and 6 men can finish it in 3 days.

7. The above information, expressed as pair of linear equation in two variable is [Take time taken by one woman alone to finish the work alone as x and time taken by one woman alone to finish the work as y]

a) $\frac{2}{x}+\frac{5}{y}=\frac{1}{4};\frac{3}{x}+\frac{6}{y}=\frac{1}{3}$ b) $\frac{2}{x}+\frac{5}{y}=4;\frac{3}{x}+\frac{6}{y}=3$

c) $2x+5y=\frac{1}{4};3x+6y=\frac{1}{3}$ d) $2x+5y=4;3x+6y=3$

8. The time taken by 1 woman alone to finish the work is,

a) 12 days b) 18 days c) 36days d) None of these

9. Time taken by 1 man alone to complete the embroidery work is

a) 12 days b) 18 days c) 36days d) None of these

ANSWER Q 10 TO Q 12 ON THE BASIS OF THE FOLLOWING INFORMATION

Aman is travelling back to his home on vacations. To travel 300 km to his home he covers part of the journey by bus and part by train. Aman takes 4 hours if he travels 60 km by train and the remaining by bus. If he travels 100 km by train and the remaining by bus, she takes 10 minutes longer.

10. The above situation can be expressed as the following pair of linear equation in two variable is [Take Speed of bus x km/hr and speed of train as y km/hr]

a) $\frac{240}{x}+\frac{60}{y}=\frac{1}{4};\frac{100}{x}+\frac{200}{y}=\frac{1}{4.10}$ b) $240x+60y=4;100x+200y=4.10$

c) $240x+60y=\frac{1}{4};100x+200y=\frac{25}{6}$ d) $\frac{240}{x}+\frac{60}{y}=4;\frac{100}{x}+\frac{200}{y}=\frac{25}{6}$

11. The speed of the train in km per hour is

a) 60 b) 80 c) 40 d) 100

12. The speed of the bus in km per hour is

a) 60 b) 80 c) 40 d) 100

ANSWER Q 13 TO Q 15 ON THE BASIS OF THE FOLLOWING INFORMATION

On selling a tea set at 5% loss and a lemon set at 15% gain, a crockery seller gains Rs 7. If sell the tea set at 5% gain and the lemon set at 10% gain, he gains Rs 13.

13. The pair of linear equations, which correctly express the above situation by taking x as the cost price of tea set and y as the cost price of lemon set is

a) $x-3y=140;5x+10y=1300$ b) $-x+3y=140;-5x+10y=1300$

c) $-x+3y=140;5x+10y=1300$ d) None of these

14. The actual price of the tea set is

a) ₹ 100 b) ₹ 80 c) ₹ 120 d) ₹ 70

15. The actual price of the lemon set is

a) ₹ 100 b) ₹ 80 c) ₹ 120 d) ₹ 70