

# Mathematics

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(Chapter – 3) (Pair of Linear Equations in two Variables) (Practice Test 5)

(Class X)

Time: 2 hour

M. M: 50

## General Instructions:

1. This question paper contains four sections: A, B, C and D. Each part is compulsory.
2. Section A has 10 MCQ of one mark each.
3. Section B has 5 questions of two marks each.
4. Section C has 6 questions of three marks each. Attempt any 5 out of 6.
5. Section D has 5 questions of five marks each, attempt any 3 out of 5.
6. There is no negative marking.

## [Section – A]

1. 10 students of class X took part in a Mathematics quiz. If the number of girls is 4 more than the number of boys, find the number of boys who took part in the quiz.  
(A) 3 (B) 7 (C) 2 (D) 8
2. Area of figure OABC is (in square units):  
(A) 1 (B) 2 (C) 3 (D) 4
3. If  $x + 5y = 34$  and  $x - 5y = -6$ , find the value of  $5y - 2x$ .  
(A) -8 (B) 14 (C) 8 (D) 20
4. 5 pencils and 7 pens together cost ₹50 whereas 7 pencils and 5 pens cost ₹46. Find the cost of 2 pencils and 3 pens.  
(A) 5 (B) 6 (C) 7 (D) none of these
5. An equation  $ax + by + c = 0$  is a linear equation in 2 variables, where a, b, c are:  
(A) 17 m/min (B) 7 m/min (C) 13 m/min (D) 26 m/min
6. A linear equation in two variables has:  
(A) 58 and 13 or 16 and 29 (B) 68 and 23 or 36 and 49  
(C) 18 and 73 or 56 and 93 (D) 78 and 13 or 26 and 39
7. The perimeter of a rectangle is 44 cm. Its length exceeds twice its breadth by 4 cm. Find the area of the rectangle.  
(A)  $46\text{cm}^2$  (B)  $49\text{cm}^2$  (C)  $96\text{cm}^2$  (D)  $69\text{cm}^2$
8. For what value of k, will the equations,  $x + 2y + (11 - k) = 0$  and  $2x + ky + (10 + k) = 0$  represent the coincident lines:  
(A)  $k = 12$  (B)  $k = 4$  (C)  $k = 36$  (D)  $k = 2$
9. A pair of linear equations is not consistent if  
(A) has many solutions (B) has one solution  
(C) graph intersect or coincide (D) graph is parallel
10. The pair of equations  $y = 9$  and  $y = -7$  has:  
(A) one solution (B) two solutions  
(C) infinitely many (D) no solution

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[Section – B]

11. If 2 is added to the numerator of a fraction, it reduces to  $\frac{1}{2}$  and if 1 is subtracted from the denominator, it reduces to  $\frac{1}{3}$ . Find the fraction.
12. Solve  $23x - 29y = 98$  and  $29x - 23y = 110$ .
13. A says to B my present age is five times you're that age when I was an old as you are now. If the sum of their present ages is 48 years, find their present ages.
14. If the lines given by  $3x + 2ky = 2$  and  $2x + 5y + 1 = 0$  are parallel, then find value of k.  
 $5x - 4y + 8 = 0$  and  $7x + 6y - 9 = 0$

[Section – C]

15. A man has only 20 paisa coins and 25 paisa coins in his purse. If he has 50 coins in all totaling Rs.11.25. How many coins of each kind does he have?
16. On selling a T.V. at 5% gain and a fridge at 10% gain shop keeper gains Rs.2000. But if he sells the T.V at 10% gain and the Fridge at 5% loss, he gains Rs.1500 on the transaction. Find the actual Price of TV and Fridge.
17. The area of a rectangle gets reduced by 9 square units, if its length is reduced by 5 units and breadth is increased by 3 units. If we increase the length by 3 units and the breadth by 2 units, the area increases by 67 square units. Find the dimensions of the rectangle.
18. The sum of a two-digit number and the number formed by interchanging its digits is 110. If 10 is subtracted from the first number, the new number is 4 more than 5 times the sum of the digits in the first number. Find the first number.
19. Jamila sold a table and a chair for 1050, thereby making a profit of 10% on the table and 25% on the chair. If she had taken a profit of 25% on the table and 10% on the chair, she would have got 1065. Find cost price of each.
20. 8 men and 12 boys can finish a piece of work in 10 days while 6 men and 8 boys can finish it in 14 days. Find the time taken by one man alone and that by one boy alone to finish the work.

[Section – D]

21. A boat goes 30 km upstream and 44 km downstream in 10 hours. In 13 hours, it can go 40 km upstream and 55 km downstream. Determine the speed of the stream and that of the boat in still water.
22. Places A and B are 100 km apart on a highway. One car starts from A and another from B at the same time. If the cars travel in the same direction at different speeds, they meet in 5 hours. If they travel towards each other, they meet in 1 hour. What are the speeds of the two cars?

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23. Yash scored 40 marks in a test, getting 3 marks for each right answer and losing 1 mark for each wrong answer. Had 4 marks been awarded for each correct answer and 2 marks been deducted for each incorrect answer, then Yash would have scored 50 marks. How many questions were there in the test?
24. Solve the following pair of linear equations by the elimination method and the substitution method:  
(A)  $3x - 5y - 4 = 0, 9x = 2y + 7$  and (B)  $\frac{x}{2} + \frac{2y}{3} = -1, x - \frac{y}{3} = 3$
25. Which of the following pairs of linear equations are consistent/inconsistent? If consistent, obtain the solution graphically:  
(A)  $2x + y = 6, 4x - 2y = 4$  and (B)  $2x - 2y - 2 = 0, 4x - 4y - 5 = 0$



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## Hints and Answers

### Section - A

- 3
- 4
- 8
- ₹21
- real numbers
- infinitely many
- $96\text{cm}^2$
- $k = 4$
- graph is parallel
- no solution

### Section - B

- $\frac{3}{10}$
- $x = 3, y = -1$
- $x = 30$  years
- $\frac{15}{4}$
- represents intersecting lines

### Section - C

- no. of 20 paise coins = 25  
no. of 25 paise coins = 25
- $x = ₹ \frac{20000}{3}, y = ₹ \frac{50000}{3}$
- length = 17 units; breadth = 9 units
- 64
- CP of table = Rs.500, CP of chair = Rs.400
- 280 days

### Section - D

- $x = 8\text{km/hr}, y = 3\text{km/hr}$
- 60 km/hr and 40 km/hr
- 20
- (A)  $x = \frac{9}{13}$  and  $y = -\frac{5}{13}$   
(B)  $x = 2$  and  $y = -3$

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