1. For which values of p and q, will the following pair of linear equations have infinitely many solutions?

   $4x + 5y = 2$; $(2p + 7q)\,x + (p + 8q)\,y = 2q - p + 1$.

2. Solve the following pair of linear equations: $21x + 47y = 110$; $47x + 21y = 162$
3. Draw the graphs of the pair of linear equations $x - y + 2 = 0$ and $4x - y - 4 = 0$. Calculate the area of the triangle formed by the lines so drawn and the x-axis.
4. For which value(s) of λ , do the pair of linear equations
   $\lambda x + y = \lambda 2$ and $x + \lambda y = 1$ have
   (i) no solution?
   (ii) infinitely many solutions?
   (iii) a unique solution?
5. For which value(s) of k will the pair of equations $kx + 3y = k - 3$; $12x + ky = k$ have no solution?
6. For which values of a and b, will the following pair of linear equations have infinitely many solutions? $x + 2y = 1$ $(a - b)x + (a + b)y = a + b - 2$
7. If $2x + y = 23$ and $4x - y = 19$, find the values of $5y - 2x$ and $y/x - 2$.
8. If $x+1$ is a factor of $2x^3 + ax^2 + 2bx + 1$, then find the values of a and b given that $2a-3b = 4$.
9. The angles of a triangle are x, y and 40°. The difference between the two angles x and y is 30°. Find x and y.
10. Two years ago, Salim was thrice as old as his daughter and six years later, he will be four years older than twice her age. How old are they now?
11. The age of the father is twice the sum of the ages of his two children. After 20 years, his age will be equal to the sum of the ages of his children. Find the age of the father.
12. Two numbers are in the ratio 5 : 6. If 8 is subtracted from each of the numbers, the ratio becomes 4 : 5. Find the numbers.
13. There are some students in the two examination halls A and B. To make the number of students equal in each hall, 10 students are sent from A to B. But if 20 students are sent from B to A, the number of students in A becomes double the number of students in B. Find the number of students in the two halls.
14. A shopkeeper gives books on rent for reading. She takes a fixed charge for the first two days, and an additional charge for each day thereafter. Latika paid Rs 22 for a book kept for six days, while Anand paid Rs 16 for the book kept for four days. Find the fixed charges and the charge for each extra day.
15. In a competitive examination, one mark is awarded for each correct answer while ½ mark is deducted for every wrong answer. Jayanti answered 120 questions and got 90 marks. How many questions did she answer correctly?
16. The angles of a cyclic quadrilateral ABCD are $A = (6x + 10)°$, $B = (5x)°$ $C = (x + y)°$, $D = (3y - 10)°$ Find x and y, and hence the values of the four angles.
17. Jamila sold a table and a chair for Rs 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 Rs 1065. Find the cost price of each.[500, 400]
18. It can take 12 hours to fill a swimming pool using two pipes. If the pipe of larger diameter is used for 4 hours and the pipe of smaller diameter for 9 hours, only half the pool can be filled.How long would it take for each pipe to fill the pool separately?[20, 30]
19. Ankita travels 14 km to her home partly by rickshaw and partly by bus. She takes half an hour if she travels 2 km by rickshaw, and the remaining distance by bus. On the other hand, if she travels 4 km by rickshaw and the remaining distance by bus, she takes 9 minutes longer. Find the speed of the rickshaw and of the bus.
20. A person, rowing at the rate of 5 km/h in still water, takes thrice as much time in going 40 km upstream as in going 40 km downstream. Find the speed of the stream.