

Mathematics Revision Exercises

Simultaneous Equations and their Applications

Find a values for x and y which satisfy each of the following:-

1. $x+y=6, x-y=0$
2. $x+2y=3, -x+3y=2$
3. $-3x+4y=7, 3x+y=-2$
4. $2x+5y=16, x-y=1$
5. $3x+4y=-7, 2x+y=-3$
6. $2x-5y=1, 4x-3y=9$
7. $4x-5y=22, 7x+3y=15$
8. $2x+3y-8=0, 3x+2y=17$
9. $7x+4y-1=0, 5x+2y+1=0$
10. $2x-7y=-3, 3x-7y=-1$
11. $3x+2y=6, x-y=1$
12. $2x+y+2=0, x+2=y$
13. $3x=4y+12, y=x-1$
14. $4x=5y, 3y+7-5x$
15. $3x-5y=2, 7x+3y=12$
16. $11x+3y+7=0, 2x+5y-21=0$
17. $7x+3y-15=0, 5x-2y=19$
18. $5x-2y=6/10, 2x+y=3/2$
19. Find a solution to the following;-
 $5p+q=10, 14p+3q=18$
20. $s-8t+20=0, 5s-7t+1=0$
21. The sum of the length and breadth of a rectangle is 84cm. The length is 18cm more than the breadth. Find the length and breadth.
22. Six bottles of juice and four cans of juice cost £3.40. Three bottles and ten cans of juice cost £4.90. Find the cost of a single bottle and a single can.
23. A straight line has equation $y=mx+c$. (2,2) and (3,6) are points on the line. Form a pair of equations and solve them to find m and c . If the point (a,14) lies on the line, find the value of 'a' from you equation.
24. The height h metres above the ground reached by a missile after t seconds is given by the equation $h=at+bt^2$. Find the constants 'a' and 'b' given that $h=19$ when $t=1$, and when $h=28$ and $t=2$. Use the formula to calculate h when $t=4$. What happens when $t=4.8$?
25. 480 people attend a heavy metal concert. Standing tickets are £40 and seats cost £60 each! If the total amount of money taken in was £25,300 how many people were standing and how many were sitting?
26. A record company has a machine X which can make 30 CDs per minute. A new machine Y is installed which makes 40 CDs per minute. If 36,000 CDs were produced on a day when the total amount of machine running time was 18 hours, for how many hours was machine X operated for and machine Y operated for?

ANSWERS
 1) 3, 3 2) 1, 1 3) -1, 1 4) 3, 2 5) -1, -1 6) 3, 1 7) 3, -2 8) 7, -2 9) -1, 2 10) 2, 1 11) 8/5, 3/5 12) -4/3, 2/3 13) -8, -9
 14) 35/37, 28/37 15) 3/2, 1/2 16) -2, 5 17) 3, -2 18) 2/5, 7/10 19) 12, -50 20) 4, 3 21) 51cm, 35cm 22) 30p, 40p
 23) $m=4, c=-6; a=5$ 24) $a=24, b=-5; h=16$; missile hits land! 25) 175, 305 26) 12 and 6 hours respectively.