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?