

Substitution

1. $e = 2f - 5g$. Find the value of e when $f = 12$ and $g = 3$ $e = 2(12) - 5(3) = 8$
2. $e = 2f - 5g$. Find the value of f when $e = 8$ and $g = -6$ $8 = 2f - 5(-6) \Rightarrow 8 = 2f + 30$
 $\Rightarrow -22 = 2f \Rightarrow f = -11$
3. $f = 5p - 4v$. $p = -4$, $v = 3$ Work out the value of f $f = 5(-4) - 4(3) = -20 - 12 = -32$
4. $f = 5p - 4v$. $f = -22$, $v = -5$ Work out the value of p . $-22 = 5p - 4(-5) \Rightarrow -22 = 5p + 20$
 $\Rightarrow -42 = 5p \Rightarrow p = -8.4$
5. $T = 4a - 7b$. Work out the value of T when $a = 3$ and $b = 2$ $T = 4(3) - 7(2) = -2$
6. $y = x^3 + kx + 5$. Work out the value of y when $k = 6$ and $x = -2$ $y = (-2)^3 + 6(-2) + 5 = -15$
7. $y = x^3 - kx + 5$. Work out the value of k when $y = 6$ and $x = -2$ $6 = (-2)^3 - k(-2) + 5 \Rightarrow 6 = -8 + 2k + 5$
 $\Rightarrow 6 = 2k - 3 \Rightarrow 9 = 2k \Rightarrow k = 4.5$
8. $P = 5g + h^2$. Find the value of P when $g = 3$ and $h = -4$ $P = 5(3) + (-4)^2 = 31$
9. $B = 6e - 3f$. Work out the value of B when $e = 3.2$ and $f = -4$ $B = 6(3.2) - 3(-4) = 31.2$
10. $a = 3c + f$. Work out the value of c when $a = 23$ and $f = 5$ $23 = 3c + 5 \Rightarrow 18 = 3c \Rightarrow c = 6$
11. $t = 4k + 9$ $k = 2$. Work out the value of t . $t = 4(2) + 9 = 17$
12. $p = 2n^2$ $n = 3$. Work out the value of p . $p = 2(3)^2 = 18$
13. $a = -5$ $c = -2$. Work out the value of $2a^2 + 6c$. $2(-5)^2 + 6(-2) = 38$
14. $W = 4x + 5y$ Work out the value of W when $x = -2$ and $y = 3$. $W = 4(-2) + 5(3) = 7$
15. $W = 4x + 5y$ Work out the value of x when $W = -5$ and $y = 3$. $-5 = 4x + 5(3) \Rightarrow -5 = 4x + 15$
 $\Rightarrow -20 = 4x \Rightarrow x = -5$