ALGEBRAIC SUBSTITUTION

Task 1 – Given that

$a = 5$

$b = 3$

$c = 2$

$d = 1$

$e = 4$

Work out the value of:

1) $a + 4$

2) $9b$

3) $c - 10$

4) $d + 2$

5) $3e$

6) $a + b + c$

7) $c + d + e$

8) $a - c$

9) $10 - d$

10) $\frac{20}{a}$

11) $\frac{e}{5}$

12) $\frac{c}{2}$

13) a^2

14) b^3

15) $\sqrt{e}$

16) $\frac{a}{d}$

17) $\sqrt{d} + b$

18) $\frac{ae}{10}$

19) $ab + cd$

20) $abe \div c$

Task 2 – Given that

$v = 12$

$w = 10$

$x = 1$

$y = 0.5$

$z = -2$

Work out the value of:

21) $v + 6$

22) $\frac{60}{5}$

23) $6y + 3$

24) $x + y + z$

25) $3z - 9$

26) $12 - yz$

27) $2w - 5$

28) $10y - 9$

29) $4x + 1$

30) $2v^2$

31) $(yz)^2$

32) $\frac{w}{y}$

33) $\frac{v}{3} + 8$

34) $vw \div z$

35) $\frac{122-x}{11}$

36) $\frac{w-z}{4}$

37) $(y - z)^3$

38) xyz

39) $3(x + 7)$

40) $2(y - 7) + 10$

Task 3

41) Given that $a = 7b + 4$

Work out the value of a when $b = -2$

42) Given that $x = 4$ and $y = 8$

Work out the value of $9x + 2y$

43) Given that $p = 12 - 3q$

Work out the value of p when $q = 5$

44) Given that $m = 3n - 10$

Work out the value of m when $n = -4$

45) Given that $v = u + at$

Work out the value of v when,

$$u = 10$$
$$a = 2$$
$$t = 5$$

46) Given that $l = 4n + 2k$

Work out the value of l when $n = 6$ and

$$k = -3$$

47) Given that $x = 2y - z$

Work out the value of x when,

$$y = -9$$
$$z = -12$$

48) Given that $u = v - 2z$

Work out the value of u when $v = 10$ and $z = -4$

49) Given that $r = 6(s + 3)$

Work out the value of r when $s = -5$

50) Given that $t = \frac{r}{s}$

Work out the value of t when $r = -72$ and $s = \frac{1}{4}$

51) Given that $k = 5m^2 - 1$

Work out the value of k when $m = -6$

52) Given that $c = 2d^3 + 7$

Work out the value of c when $d = 4$

53) Given that $y = \frac{3x-2z}{x+z}$

Work out the value of y when $x = 8$ and $z = -2$

54) Given that $n = 4p^2 - 6q$

Work out the value of n when $p = -5$ and $q = -3$

55) Given that $w = (a + 2b)^2 - 3ab$

Work out the value of w when $a = -4$ and $b = 7$

56) Given that $a = \sqrt{bcd}$

Work out the value of a when $b = 3$, $c = 4$ and $d = 12$

57) Given that $d = \frac{2e-10}{f^2-\sqrt[3]{g}}$

Work out the value of d when,

$$e = 13$$
$$f = 12$$
$$g = 8$$

Give your answer as a fraction in simplest form.