Substitution

1. If $x = -5$, $y = 2$ and $z = 3$, evaluate the following:

a) $10 - x^2$ b) $(2x)^2 - 3y^2$ c) xy^2

d) $-7 - 2x$ e) $4xyz - \frac{xy}{4z}$ f) $\frac{(4y - z)^2}{(4y - z^2)}$

2. The volume of a box is given by $(x + 3)(2x - 1)(x - 4)$.

Find the volume if $x = 7$ cm.

3. One of the equations of motion when acceleration is constant can be written

$v^2 = u^2 + 2as$. Find v if u = 2.3, a = 0.8 and s = 28.6.

4. If $C = \frac{5}{9}(F - 32)$ is the formula which changes Fahrenheit into Centigrade, find the Centigrade equivalent of 102°F to the nearest degree.

5. When $x = -2$ find the value of the following:

a) $x^2 + 3x$ b) $x^2 - 4x - 2$ c) $3x^2 - (2x)^2$ d) $12 - x^3$

6. $p = -1$ $q = 2$ $r = -3$

a) $5 - (p^2 + 1) =$ b) $2p - 2(q^2 + r^2) =$ c) $(3pq)^2 =$

d) $\frac{(r - q)}{p} + \frac{(3q - r)}{2p} =$

7. Work out the value of $x^3 + 3x^2 - 2x - 16$ when

i) $x = 0$ ii) $x = 1$ iii) $x = 2$ iv) $x = 3$ v) $x = -1$

8. What value of x makes the expression $x^3 - 2x - 21$ equal to zero?