

KS3 – Substitution

Section A – Substituting into Expressions

Q1 (4 marks)

Work out the value of each expression when $x = 5$.

a) $x + 7$

b) $3x$

c) $2x + 4$

d) $20 - x$

Q2 (4 marks)

Work out the value of each expression when $a = 4$.

a) $5a$

b) a^2

c) $3a + 8$

d) $30 - 2a$

Q3 (3 marks)

Work out the value of each expression when $y = 6$.

a) $y^2 + 3$

b) $4y - 7$

c) $2y^2 - 5$

Q4 (3 marks)

Work out the value of each expression when $p = 3$ and $q = 5$.

a) $p + q$

b) $2p + 3q$

c) $pq + 4$

Q5 (3 marks)

Work out the value of each expression when $a = 7$ and $b = 2$.

a) $3a - b$

b) $ab + 5$

c) $a^2 - b^2$

Q6 (3 marks)

Work out the value of each expression when $x = -3$.

a) $x + 8$

b) $4x$

c) $x^2 + 2$

Q7 (3 marks)

Work out the value of each expression when $m = -2$ and $n = 5$.

a) $m + n$

b) $3m - n$

c) $m^2 + 2n$

Challenge

Q8 (3 marks)

Work out the value of each expression when $x = -4$ and $y = 3$.

a) $x^2 + y$

b) $2xy$

c) $x^2 - y^2$

Section B – Substituting into Formulae

Q9 (3 marks)

Use the formula $P = 2l + 2w$ to work out P.

a) $l = 5, w = 3$

b) $l = 8, w = 4$

c) $l = 12, w = 7$

Q10 (3 marks)

Use the formula $A = lw$ to work out A.

a) $l = 6, w = 4$

b) $l = 9, w = 5$

c) $l = 12.5, w = 3$

Q11 (3 marks)

Use the formula $C = 3n + 5$ to work out C.

a) $n = 4$

b) $n = 10$

c) $n = -2$

Q12 (3 marks)

Use the formula $v = u + at$ to work out v .

a) $u = 5$, $a = 2$, $t = 4$

b) $u = 12$, $a = 3$, $t = 6$

c) $u = 20$, $a = -2$, $t = 5$

Q13 (3 marks)

Use the formula $d = st$ to work out d .

a) $s = 8$, $t = 5$

b) $s = 12.5$, $t = 4$

c) $s = 6.4$, $t = 2.5$

Q14 (3 marks)

Use the formula $A = \frac{1}{2} \times b \times h$ to work out A .

a) $b = 8$, $h = 5$

b) $b = 12$, $h = 7$

c) $b = 9$, $h = 6$

Q15 (3 marks)

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Use the formula $V = lwh$ to work out V .

a) $l = 4$, $w = 3$, $h = 5$

b) $l = 7$, $w = 2$, $h = 6$

c) $l = 2.5$, $w = 4$, $h = 3$

Challenge

Q16 (3 marks)

Use the formula $y = 3x^2 - 2x + 4$.

a) Work out y when $x = 2$.

b) Work out y when $x = -1$.

c) Work out y when $x = -3$.

Total: ____ / 50

Percentage: ____%