

Algebra Revision

1) If $a = 5$ $b = 3$ $c = -2$ $d = 4$ find the value of (NC)

a) $ab - c$ b) cd^2 c) $\frac{a+b}{d+c}$ d) $3d^2 + ac$

2) Expand and simplify

a) $2x(3x - 6)$ b) $8(2x + 1) - 3(3x - 2)$
c) $6 - 2(3x - 4)$ d) $(x - 3)(x + 4)$ e) $(2x + 3)^2$
f) $(3x - 1)(2x - 4)$ g) $3(x - 2)(x + 5)$
h) $(x - 2)^3$ i) $(x - 3)(x + 4)(x + 1)$
j) $(x - 2)(x - 3) - (x + 1)(x - 4)$ k) $(x - 3)^2 - (x + 2)^2$

3) Factorise fully

a) $10x - 15$ b) $6x^2y^3 + 9x^3y$ c) $9x^2 - 3x$

4) State whether the following are equations, identities, equations or expressions:

a) $3x - 1 + y$ b) $A = 4\pi r^2$ c) $3x = 4x - 1$
d) $2x - 4 = 2(x - 2)$ e) $x + x + x = 3x$

5) A big rectangle has side lengths $2x - 1$ and $x + 7$
Another smaller rectangle has sides of $x - 2$ and $x + 1$
Find the difference in their areas in terms of x

6) Now find the total perimeter for both of the rectangles, factorise your answer.

7) A right angled triangle has side lengths of $2x + 6$ and $3x$
Find its area.

8) A circular hole is punched through the triangle with radius of x
Find the area left and factorise your answer.

1)a) 17 b) -32 c) 4 d) 38 2) $6x^2 - 12x$ b) $7x + 14$ c) $14 - 6x$ d) $x^2 + x - 12$
e) $4x^2 + 12x + 9$ f) $6x^2 - 14x + 4$ g) $3x^2 + 9x - 30$ h) $x^3 - 6x^2 + 12x - 8$
i) $x^3 + 2x^2 - 11x - 12$ j) $-2x + 10$ k) $-10x + 5$ 3) $5(2x - 3)$
b) $3x^2y(2y^2 + 3x)$ c) $3x(3x - 1)$ 4a) expression b) formula c) equation d)
identity e) identity 5) $x^2 + 14x - 5$ 6) $10(x + 1)$ 7) $3x^2 + 9x$
8) $x(3x - \pi x + 3)$