

FORM 3 TERM 3

STRAND : ALGEBRA

TOPIC : Simplifying Algebraic Expressions

KEY POINTS : binary expressions; product of two binomial expressions; simplification of algebraic products; H.C.F of two algebraic expressions; simplification of algebraic quotients

1) Simplify the following:

a) $7x + 11x$

b) $3x - 6x$

c) $3 \times 4m$

d) $-3a \times -2b$

e) $8m \times (-3n)$

2) Remove the brackets and simplify

a) $2(3x + 5)$

b) $3(5y - 2)$

c) $7(p + 3q)$

d) $n(5t - 6s)$

e) $-7p(q - 4p)$

3) Expand the brackets and simplify

a) $2(x + y) + 6(x + y)$

b) $4(2q + 5p) + 3(q - 4p)$

c) $7(3 - 2z) + 3(z - 2)$

d) $4(1 - 2x) - 3(3x - 4)$

e) $3(x + 4) - (2x + 5)$

f) $14 + 3(y + 4) - 2y$

g) $3(x + 2) - 4 + 4(x - y)$

h) $2s(t + s) + t(2t + s)$

4) Expand the brackets and simplify

a) $(x + 1)(x + 2)$

b) $(3x + 2)(x + 4)$

c) $(x - 5)(x - 3)$

d) $(x - 9)(x + 4)$

e) $(2x + 3)(x - 2)$

f) $(2x - 1)(x - 5)$

g) $(2a + 3b)(4c + 5d)$

h) $(2p + 3q)(3r - 4s)$

i) $(x + 4)^2$

j) $(x - 6)^2$

k) $(3x - 7)^2$

5) Determine the H.C.F of

a) $4x, 4y$

b) $3x^2, 6x$

c) $m^2n, 2mn^2$

d) $12x^2yz, 3xyz^2$

6) Simplify the following

a) $4a \div 2b$

b) $(-3a) \div (-3b)$

c) $12x^2yz^2 \div 4xz^2$

ANSWERS

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- 1)
 - a) $18x$
 - b) $-3x$
 - c) $12m$
 - d) $6ab$
 - e) $-24mn$

- 2)
 - a) $6x + 10$
 - b) $15y - 6$
 - c) $7p + 21q$
 - d) $5nt - 6ns$
 - e) $-7pq + 28p^2$

- 3)
 - a) $8x + 8y$
 - b) $11q + 8p$
 - c) $15 - 11z$
 - d) $16 - 17x$
 - e) $x + 7$
 - f) $26 + y$
 - g) $7x - 4y + 2$
 - h) $2s^2 + 2t^2 + 3st$

- 4)
- a) $x^2 + x + 2$
 - b) $3x^2 + 14x + 8$
 - c) $x^2 - 8x + 15$
 - d) $x^2 - 5x - 36$
 - e) $2x^2 - x - 6$
 - f) $2x^2 - 11x + 5$
 - g) $8ac + 10ad + 12bc + 15bd$
 - h) $6pr - 8ps + 9qr - 12qs$
 - i) $x^2 + 8x + 16$
 - j) $x^2 - 12x + 36$
 - k) $9x^2 - 42x + 49$

- 5)
- a) 4
 - b) $3x$
 - c) mn
 - d) $3xyz$

- 6)
- a) $\frac{2a}{b}$
 - b) $\frac{a}{b}$
 - c) $3xy$