AQA, OCR, Edexcel

GCSE

GCSE Maths

Basic Algebra Answers

Name:

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Total Marks: /39

Basic Algebra

1. Simplify the following expressions:
   a. $a + a + a + a = 4a$
   b. $b + b + b + a + a = 2a + 3b$
   c. $b \times b \times b = b^3$
   d. $b \times b \times b \times a = ab^3$
   e. $3a^2 + 2a = a(3a + 2)$
   f. $3x^2 \times 2x^2 = 6x^4$
   g. $3xy \times x = 3x^2y$
   h. $xy \times y^2x^4 = x^5y^3$
   i. $2x \times 3x \times 4 = 24x^2$

(9 Marks)

2. Expand the following:
   a. $2(3a + 1) = 6a + 2$
   b. $3(2a + 6) = 6a + 18$
   c. $5(a^2 + 9) = 5a^2 + 45$
   d. $7(a^6 + y^2) = 7a^6 + 7y^2$
   e. $6a(a + 4) = 6a^2 + 24a$
   f. $5a(2a + 4y) = 10a^2 + 20ay$
   g. $5a(3ay + 2a^2) = 15a^2y + 10a^3$

(7 Marks)

3. Simplify the following quotients:

a. $\frac{20x^4}{5x} = 4x^3$

b. $\frac{15y^3}{5y^{-2}} = 3y^5$

c. $\frac{(4x^2y^4)}{(2x^2y)} = 2y^3$

(3 Marks)

4. Solve the following equations:

a. $2x + 7 = 47$ $x = 20$

b. $5x + 18 = 48$ $x = 6$

c. $3x - 12 = 18$ $x = 10$

d. $6x - 12 = 2x + 16$ $x = 7$

e. $10x + 50 = 5x + 25$ $x = -5$

f. $4x^2 - 10 = 26$ $x = -3$ *and* $x = 3$

g. $5y + 3y + y = 4y + 5$ $y = 1$

h. $2x - 5x + 2 = -3 - 2x$ $x = 5$

i. $2 + 4y^2 = y^2 + 14$ $y = -2$ *and* $y = 2$

j. $\frac{3x^2}{9} = 3$ $x = -3$ *and* $x = 3$

(20 Marks)