

# Algebra and Functions

Name:	Class:	Date:
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1) Simplify the expression [4]

a)  $-9ac + 4bc + 2ac + 11ab + 11bc - 6ab$

b)  $4(-7yz^2 - 12y^2z + 6x^2y) - 8yz^2 + 11y^2z + 8x^2y$

c)  $y^7 \div (5y^2)^4$

d)  $5y^{10} \times 3y^9 \div 4y^3$

2) Expand and simplify [2]

a)  $5y(-3y^2 + 4)$

b)  $4(-7x + 5) - 2(-4 + 8x) - 3(-5x - 9)$

3) Factorise completely [6]

a)  $18y^2 + 30y$

b)  $y^2 + 14y + 33$

c)  $3z^2 + 8z + 5$

d)  $5b^2 + 26b - 63$

e)  $a^2 - 16$

f)  $9a^2 - 49$

4) Evaluate [1]

$343^{-\frac{1}{3}}$

5) Simplify

[4]

a)  $5t^{12} \div 6t^{\frac{5}{2}}$

b)  $x^{\frac{7}{2}} \times x^{\frac{1}{5}}$

c)  $\sqrt{40} - \sqrt{160}$

d)  $8\sqrt{28} - 9\sqrt{7} + 6\sqrt{63}$

6) Rationalise the denominator

[3]

a)  $\frac{15}{\sqrt{50}}$

b)  $\frac{-84}{7 - \sqrt{7}}$

c)  $\frac{-6}{\sqrt{10} + \sqrt{7}}$

## Solutions for the assessment Algebra and Functions

1) a)  $-7ac + 15bc + 5ab$

b)  $-36yz^2 - 37y^2z + 32x^2y$

c)  $\frac{1}{625}y^{-1}$

d)  $\frac{15}{4}y^{16}$

2) a)  $-15y^3 + 20y$

b)  $-29x + 55$

3) a)  $6y(3y + 5)$

b)  $(y + 11)(y + 3)$

c)  $(3z + 5)(z + 1)$

d)  $(b + 7)(5b - 9)$

e)  $(a + 4)(a - 4)$

f)  $(3a + 7)(3a - 7)$

4)  $\frac{1}{7}$

5) a)  $\frac{5}{6}t^{\frac{19}{2}}$

b)  $x^{\frac{37}{10}}$

c)  $-2\sqrt{10}$

d)  $25\sqrt{7}$

6) a)  $\frac{3\sqrt{2}}{2}$

b)  $-14 - 2\sqrt{7}$

c)  $-2\sqrt{10} + 2\sqrt{7}$