A5...Simplyfing Expressions- Algebraic Indices

OCR

7 **(a)** Work out.

(i) 11^2

(a)(i) ..... **[1]**

(ii) $\sqrt{400}$

(ii) ..... **[1]**

(b) Simplify.

$m^2 \times m^6$

(b) ..... **[1]**

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7 **(a)** Work out.

(i) 11^2

11 x 11

(a)(i) 121 [1]

(ii) $\sqrt{400}$

_ x _ = 400
20 20

(ii) 20 or -20 [1]

(b) Simplify.

$m^2 \times m^6$

(b) m^8 [1]

(c) Simplify.

$$f^2 \times f^4$$

(c) ..... **[1]**

(c) Simplify.

$$f^2 \times f^4$$

(c) f^6 ..... **[1]**

(b) Factorise fully.

$10x^2 + 6x$

(b) ..... **[2]**

(c) Simplify.

$(x^5)^2$

(c) ..... **[1]**

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(b) Factorise fully.

$10x^2 + 6x$

$2x(5x + 3)$

(b) $2x(5x+3)$ ..... **[2]**

(c) Simplify.

$(x^5)^2$

$x^5 \times x^5$

(c) x^{10} ✓ ..... **[1]**

4 **(a)** Simplify.

A2 **(i)** $5x - 6y - x + 3y$

(a)(i) ..... **[2]**

(ii) $w^8 \div w^2$

A5

(ii) ..... **[1]**

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4 **(a)** Simplify.

A2 **(i)** $5x - 6y - 1x + 3y$

$-6y + 3y$

(a)(i) $4x - 3y$ ..... **[2]**

(ii) $w^8 \div w^2$

A5 subtract

(ii) w^6 ..... **[1]**

14 **(a)** Find the value of x in each of the following.

(i) $a^4 \times a^3 = a^x$

A5

(a)(i) $x =$ ..... **[1]**

(ii) $(b^4)^3 = b^x$

A5

(ii) $x =$ ..... **[1]**

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14 **(a)** Find the value of x in each of the following.

(i) $a^4 \times a^3 = a^x$

A5

4+3

(a)(i) $x =$ 7 **[1]**

(ii) $(b^4)^3 = b^x$

A5

4x3

(ii) $x =$ 12 **[1]**

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16 **(a)** Simplify.

$$\frac{3y^3}{y^{-4}}$$

(a) ..... **[1]**

(b) Write as a single fraction in its simplest form.

$$\frac{3}{x-1}+\frac{4}{x+2}$$

(b) ..... **[3]**

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16 **(a)** Simplify.

AS $\dfrac{3y^3}{y^{-4}}$

$y^3 \div y^{-4}$

$3 - -4$

$+$

$3y^7$

(a) ..... **[1]**

(b) Write as a single fraction in its simplest form.

ASI $\dfrac{3}{x-1} + \dfrac{4}{x+2}$

$(x-1)(x+2)$

Common den

$\dfrac{3(x+2)}{(x-1)(x+2)} + \dfrac{4(x-1)}{(x-1)(x+2)}$

$= \dfrac{3x+6}{(x-1)(x+2)} + \dfrac{4x-4}{(x-1)(x+2)}$

$\dfrac{7x+2}{(x-1)(x+2)}$ ✓

(b) ..... **[3]**

2 **(a)** Simplify.

(i) $a^6 \div a^2$

AS

(a)(i) ..... **[1]**

(ii) $(b^5)^3$

AS

(ii) ..... **[1]**

(b) Factorise.

A II $6x - x^2$

(b) ..... **[1]**

2 **(a)** Simplify.

(i) $a^6 \div a^2$

AS

(a)(i) a^4 [1]

(ii) $(b^5)^3$

AS

(ii) b^{15} [1]

(b) Factorise.

AII

$6x - x^2$

(b) $x(6-x)$ [1]

2 Given that $y^{18} \div y^{6} = y^{k}$, find the value of k.

$k =$ ..... **[1]**

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2 Given that $y^{18} \div y^{6} = y^{k}$, find the value of k.

$18 - 6 = 12$

$k =$ 12 ..... **[1]**

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20 (a) Simplify $m^3 \times m^4$

A3

.....

(1)

(b) Simplify $(5np^3)^3$

A5

.....

(2)

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(a) Simplify $m^3 \times m^4$

A3

m^7

m^7

(1)

(b) Simplify $(5np^3)^3$

A5

$5np^3 \times 5np^3 \times 5np^3$

$125n^3p^9$

(2)

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$$\frac{y^4 \times y^n}{y^2} = y^{-3}$$

(b) Find the value of n.

A5

.....

(2)

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$\frac{y^4 \times y^n}{y^2} = y^{-3}$

$-3 + 2 = -1$

(b) Find the value of n.

A5

$y^4 \times y^n = y^{-3} \times y^2$

$y^4 \times y^n = y^{-1}$

$4 + (-5) = -1$

$n = -5$

(2)

AQA

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3 Circle the expression that is equivalent to $\left(4a^5\right)^2$

[1 mark]

A5

$16a^{10}$ $16a^7$ $8a^{10}$ $8a^7$

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3 Circle the expression that is equivalent to $\left(4a^5\right)^2$

[1 mark]

A5

$16a^{10}$ $16a^7$ $8a^{10}$ $8a^7$

$4a^5 \times 4a^5 = 16a^{10}$