

7.2 Answers (The Test)

GCSE Mathematics Algebraic Fractions

Answer 1

(a) $5(x - 4)$

(b) $y(y + 6)$

Answer 2

(a) $\frac{11}{3}$

(b) -0.5

Answer 3

(a) $n(n + 8)$

(b) $2x - 27$

(c) $y^2 + 9y + 14$

[3, 6, 6 marks]

Answer 4

$$\begin{aligned} \text{LHS} &= \frac{2}{3} + \frac{1}{4} & \text{LCM}\{3, 4\} &= 12 \\ &= \frac{4}{4} \times \frac{2}{3} + \frac{1}{4} \times \frac{3}{3} \\ &= \frac{8}{12} + \frac{3}{12} \\ &= \frac{11}{12} \\ &= \text{RHS} \end{aligned} \quad \square$$

[2 marks]

Answer 5

(a) (i) 7^8 (b) $n = 5$
(ii) 5^6

[2, 2 marks]

Answer 6

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

[1, 2 marks]

(c) (i) $(x + 8)(x - 2)$
(ii) $x = -8$ or $x = 2$

[3 marks]

Answer 7

(a) $5x^3y^2$ (b) $8n^{12}$

[2, 2 marks]

Answer 8

(a) $12x^2 + x - 35$ (b) $16y^4$

[2, 2 marks]

Answer 9

$$\frac{x - 4}{x - 9}$$

Answer 10

$$\frac{2x + 5}{x + 4}$$

[2, 3 marks]

Answer 11

(i) $\frac{44x + 1}{15}$

(ii) $\frac{58x + 37}{10}$

[3, 3 marks]

Answer 12

$$\frac{5x + 21}{(x + 5)(x + 4)}$$

[3 marks]

Answer 13

$$\begin{aligned}
\text{LHS} &= \frac{8}{(x - 6)} + \frac{2}{(x + 6)} \\
&= \frac{(x + 6)}{(x + 6)} \times \frac{8}{(x - 4)} + \frac{2}{(x + 6)} \times \frac{(x - 4)}{(x - 4)} \\
&= \frac{8x + 48 + 2x - 8}{(x + 6)(x - 4)} \\
&= \frac{10x + 40}{(x - 4)(x + 6)} \\
&= \frac{10(x + 4)}{(x - 4)(x + 6)} \\
&= \text{RHS}
\end{aligned}$$

□

[3 marks]

Answer 14

(a) $4x$

(b) $x + 6 = 4x - 6$

(c) $x = 4$

[1, 2, 2 marks]

Answer 15

(a) $\frac{x - 7}{x}$

(b) $\frac{2}{(2x + 3)(x + 1)}$

[2, 4 marks]

Answer 16

$x = 17$

Answer 17

$x = 2\frac{2}{3}$

Answer 18

$x = -1, 10$

[4, 4, 4 marks]