

2.2 Answers (More Revision of GCSE Algebra - Homework)

Additional Mathematics
A-Level Pure Mathematics : Year 1
Topics in Algebra

Answer 1

(a) $5(x - 4)$

(b) $y(y + 6)$

[1, 2 marks]

Answer 2

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

(b) -0.5

[2, 4 marks]

Answer 3

(a) $n(n + 8)$

(b) $2x - 27$

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

[2, 2, 2 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

(ii) 5^6

(b) $n = 5$

[2, 2 marks]

Answer 6

(a) $5(2y - 3)$

(b) $3pq(3p + 4q)$

(c) (i) $(x + 8)(x - 2)$

(ii) $x = -8$ or $x = 2$

[1, 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

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

[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]

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