

3.5 Answers

GCSE Mathematics Algebraic Fractions

3.5.1 Solutions (3.2 Example)

$$\begin{aligned}
 & \frac{3}{(x+1)} + \frac{5}{(x+2)} \\
 = & \frac{(x+2)}{(x+2)} \times \frac{3}{(x+1)} + \frac{5}{(x+2)} \times \frac{(x+1)}{(x+1)} \\
 = & \frac{3(x+2) + 5(x+1)}{(x+1)(x+2)} \\
 = & \frac{3x+6+5x+5}{(x+1)(x+2)} \\
 = & \frac{8x+11}{(x+1)(x+2)}
 \end{aligned}$$

[4 marks]

3.5.2 Solutions (3.4 Exercise)

Answer 1

$$\frac{7x+43}{(x+5)(x+7)}$$

Answer 2

$$\frac{11x+34}{(2x+3)(x+5)}$$

Answer 5

$$\frac{x^2+x+2}{x(x+2)}$$

[4, 4, 4 marks]

Answer 6

$$\frac{x}{2} \quad \frac{3-x}{x(x-1)}$$

Answer 8

$$\frac{8-x}{x(2-x)}$$

Answer 9

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

[3, 3, 3, 2, 4 marks]

Answer 10

$$x^2 - 2x - 35$$

Answer 11

- (i) 0.5
(ii) 2.8

Answer 12

- (i) $5x = 12$
(ii) $x = 2.4$ cm

[2, 4, 3 marks]

Answer 13

$$15x^2 + 59x + 56$$

Answer 14

- (i) 3 cm
(ii) Rectangle 6×10 cm
(iii) 60 cm^2

Answer 15

$$10x^2 + 33x - 54$$

[2, 4, 2 marks]

Answer 16

- (a) $68 = 14(x+1) + 6(5x-2)$
 $68 = 44x + 2$
(b) $66 = 44x$
 $x = 1.5$

Answer 17

$$9x^2 + 30x + 25$$

[6, 2 marks]

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Teachers may obtain detailed worked solutions to the exercises by email from mhh@shrewsbury.org.uk