

2.2

Equations

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- 21** (a) Solve the equation $3(1 - 2y) = 2y - 7$
Show clear algebraic working.

$$y = \dots\dots\dots$$

(3)

12

(c) Solve $4t + 5 = 18$

$t = \dots\dots\dots$
(2)

January 2018 1FR

11 (a) Solve $\frac{x}{2} = 8$

$x = \dots\dots\dots$
(1)

(b) Solve $8 - y = 5$

$y = \dots\dots\dots$
(1)

(c) Solve $2t + 2t = 18$

$t = \dots\dots\dots$
(2)

5

(c) Solve $8p = 24$

$p = \dots\dots\dots$
(1)

(d) Solve $k - 4 = 13$

$k = \dots\dots\dots$
(1)

16

(c) Solve $5(x + 3) = 3x - 4$
Show clear algebraic working.

$x = \dots\dots\dots$
(3)

(ii) Hence, solve $x^2 + 2x - 24 = 0$

$\dots\dots\dots$
(1)

15 (a) Solve $8 - 2p = 15$

$$p = \frac{\dots\dots\dots}{(2)}$$

(b) Solve $\frac{7x - 2}{4} = 3x + 1$

Show clear algebraic working.

$$x = \frac{\dots\dots\dots}{(3)}$$

13

(b) Solve $y = \frac{2y + 1}{5}$

Show clear algebraic working.

$$y = \quad (3)$$

(c) Solve $x^2 + 3x - 18 = 0$

Show your working clearly.

(3)

4

(c) Solve $8g = 40$

$$g = \quad (1)$$

(d) Solve $19 - k = 4$

$$k = \quad (1)$$

11 (a) Solve $5m + 7 = 24$

$$m = \quad (2)$$

8

(b) Solve $2t + 3 = 12$

$$t = \quad (2)$$

13 (a) Solve $7x + 3 = x - 18$

$$x = \dots\dots\dots (2)$$

6

(c) Solve $5y + 3 = 14$

$$y = \dots\dots\dots (2)$$

9

- (c) Solve $6y - 3 = 2y + 8$
Show clear algebraic working.

$$y = \dots\dots\dots$$

(3)

8

- (d) Solve $x - 9 = 14$

$$x = \dots\dots\dots$$

(1)

- 13 (a) Solve $3f - 5 = 11$

$$f = \dots\dots\dots$$

(2)

21

(d) Solve $3(2x - 5) = \frac{9 - x}{2}$

Show clear algebraic working.

$x = \dots\dots\dots$
(4)

5

(b) Solve $n + 3 = 7$

$n = \dots\dots\dots$
(1)

23 (a) Solve the inequality $2x + 7 > 4$

.....
(2)

(b) Solve $x^2 - 3x - 40 = 0$
Show clear algebraic working.

.....
(3)

6 (b) Solve $4x + 5 = 27$

$x =$
(2)

- 20 Solve $x^2 - 5x - 36 = 0$
Show clear algebraic working.

.....
(Total for Question 20 is 3 marks)

7

- (b) Solve $x + 5 = 12$

$x =$
(1)

- (c) Solve $9y = 36$

$y =$
(1)

June 2020 1F

- 20 (a) Solve $5(4 - x) = 7 - 3x$
Show clear algebraic working.

$$x = \dots\dots\dots$$

(3)

- (ii) Hence, solve $y^2 - 2y - 48 = 0$

$$\dots\dots\dots$$

(1)

January 2021 1F

7

- (b) Solve $2n + 5 = 16$

$$n = \dots\dots\dots$$

(2)

21

(b) Solve $4 - 3x = \frac{5 - 8x}{4}$

Show clear algebraic working.

$x = \dots\dots\dots$
(3)

25

(ii) Hence, solve $x^2 + 5x - 36 = 0$

$\dots\dots\dots$
(1)

7

(e) Solve $x - 7 = 19$

$x = \dots\dots\dots$
(1)

15

- (c) Solve $5x - 11 = x + 6$
Show clear algebraic working.

$$x = \dots\dots\dots$$

(3)

- 13 Solve $5(2x - 3) = 20$
Show clear algebraic working.

$$x = \dots\dots\dots$$

(Total for Question 13 is 3 marks)

4

- (c) Solve $6g = 42$

$$g = \dots\dots\dots$$

(1)

- (d) Solve $24 = 10 + h$

$$h = \dots\dots\dots$$

(1)

24 (b) Solve $(2x + 5)^2 = (2x + 3)(2x - 1)$

$x = \dots\dots\dots$
(3)

8

(d) Solve $5x - 7 = x + 12$
Show clear algebraic working.

$x = \dots\dots\dots$
(3)

June 2021 2F

23

(ii) Hence solve $x^2 + 2x - 24 = 0$

.....
(1)

November 2021 1F

7 (a) Solve $5x = 20$

$x =$
(1)

November 2021 2F

12

(c) Solve $4(x - 3) = 7x + 15$

Show clear algebraic working.

$x =$
(3)

24

(ii) Hence solve $x^2 - 5x - 36 = 0$

January 2022 1F

7 (a) Solve $5x = 30$

.....
 $x =$
(1)

(b) Solve $y - 7 = 12$

.....
 $y =$
(1)

7

(c) Solve $5r - 3 = 8$

$$r = \frac{\dots\dots\dots}{(2)}$$

15 (a) Solve $5c = 15$

$$c = \frac{\dots\dots\dots}{(1)}$$

20

(b) Solve $6x - 5 = \frac{4x - 7}{2}$

Show clear algebraic working.

$x = \dots\dots\dots$
(3)

2

(c) Solve $\frac{c}{3} = 9$

$c = \dots\dots\dots$
(1)

8

(c) Solve $4p + 9 = 24$

$$p = \frac{\dots\dots\dots}{(2)}$$

20

(b) Solve $2x - 3 = \frac{3x - 5}{4}$

Show clear algebraic working.

$$x = \frac{\dots\dots\dots}{(3)}$$

June 2022 2F

27

(ii) Hence, solve $x^2 + 5x - 24 = 0$

(1)

June 2022 1FR

21

(ii) Hence, solve $x^2 + 8x - 9 = 0$

(1)

June 2022 2FR

23 (a) Solve $p = \frac{3p - 5}{10}$

Show clear algebraic working.

$$p = \frac{\dots\dots\dots}{(3)}$$

January 2023 1F

7 (c) Solve $2d + 7 = 16$

$$d = \frac{\dots\dots\dots}{(2)}$$

- 17 Solve $3(2 - 4x) = 5 - 8x$
Show clear algebraic working.

$x = \dots\dots\dots$

(Total for Question 17 is 3 marks)

7

- (b) Solve $5 + x = 12$

$x = \dots\dots\dots$
(1)

- (c) Solve $\frac{y}{6} = 3$

$y = \dots\dots\dots$
(1)

January 2023 1FR

4 (c) Solve $7x = 42$

$$x = \frac{\dots\dots\dots}{\dots\dots\dots} \quad (1)$$

(d) Solve $n + 6 = 5$

$$n = \frac{\dots\dots\dots}{\dots\dots\dots} \quad (1)$$

January 2023 1FR

23

(ii) Hence, solve $y^2 - 3y - 18 = 0$

$$\frac{\dots\dots\dots}{\dots\dots\dots} \quad (1)$$

January 2023 2FR

14

(d) Solve $7g + 3 = 2g - 5$
Show clear algebraic working.

$$g = \frac{\dots\dots\dots}{\dots\dots\dots} \quad (3)$$

June 2023 1F

5 (c) Solve $13 - x = 7$

$$x = \text{.....}$$

(1)

(d) Solve $4y + 7 = 43$

$$y = \text{.....}$$

(2)

June 2023 1F

21 (ii) Hence solve $x^2 + 9x - 22 = 0$

$$\text{.....}$$

(1)

November 2023 1F

7 (d) Solve $5m - 6 = 17$

$$m = \text{.....}$$

(2)

16

There are 56 metal bars in a box.
Each metal bar is gold or silver or zinc.

y metal bars are gold.

$(3y + 7)$ metal bars are silver.

$(2y - 5)$ metal bars are zinc.

- (b) Work out the number of metal bars that are zinc.
Show clear algebraic working.

(4)

- 4 Barney went for 4 walks on Tuesday.

The lengths of the walks were

- 800 metres
- 2 kilometres
- 1.7 kilometres
- x metres

The total length of the 4 walks was 6250 metres.

Work out the value of x

$x = \dots\dots\dots$

(Total for Question 4 is 3 marks)

20 (a) Solve $\frac{2x+5}{6} = 2x-5$

Show clear algebraic working.

$x = \dots\dots\dots$
(3)