

Solving Equations and Inequalities

www.Q8Maths.com

14 Solve the equation

$$3(y - 4) + \frac{y}{2} = 9.$$

Answer $y =$ [3]



www.Q8Maths.com

2) November 2012 V2

10 Solve the equation $4x - 12 = 2(11 - 3x)$.

Answer $x =$ [3]

3) June 2013 V2

12 Solve the equation.

$$5(2y - 17) = 60$$

Answer $y =$ [3]

www.Q8Maths.com

5 Solve the equation.

$$5 - 2x = 3x - 19$$

Answer $x =$ [2]



www.Q8Maths.com

3 Solve the equation $1 + 2x = -15$.

Answer $x =$ [2]

6) June 2014 V1

3 Solve the equation.

$$\frac{n-8}{2} = 11$$

Answer $n =$ [2]

www.Q8Maths.com

10 Solve the equation.

$$\frac{x+5}{x} = \frac{7}{3}$$

Answer $x = \dots\dots\dots$ [3]

www.Q8Maths.com

6 Solve the equation.

$$\frac{2x+5}{3} = 8$$

Answer $x =$ [3]

9) June 2015 V2

6 Solve.

$$5(w + 4 \times 10^3) = 6 \times 10^4$$

Answer $w =$ [2]

www.Q8Maths.com

10) June 2015 V3

9 Solve the equation.

$$3(x + 4) = 2(4x - 1)$$

Answer $x =$ [3]

11) March 2016 V2

1 Solve $(x - 7)(x + 4) = 0$.

$x =$ or $x =$ [1]

www.Q8Maths.com

12) June 2016 V3

4 Solve the equation.

$$6(y + 1) = 9$$

$y = \dots\dots\dots$ [2]

13) November 2016 V2

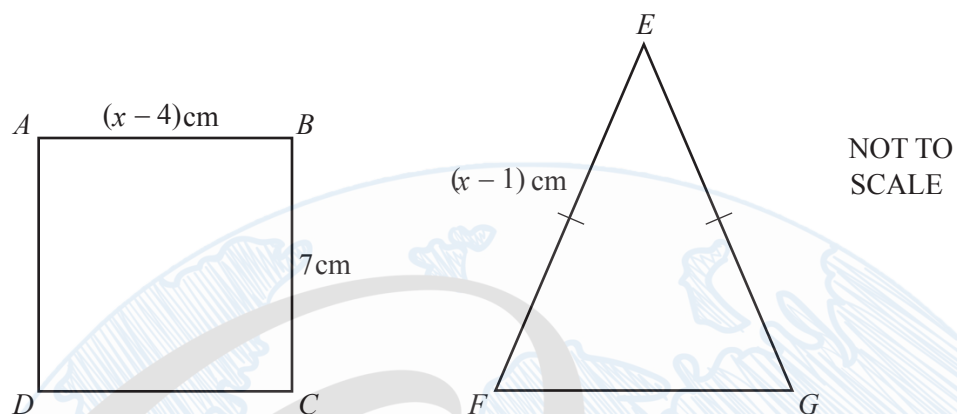
3 Solve the equation.

$$6(k - 8) = 78$$

$k = \dots\dots\dots$ [2]

www.Q8Maths.com

13



- (a) $ABCD$ is a square.

Find the value of x .

Answer(a) $x = \dots\dots\dots$ [1]

- (b) Square $ABCD$ and isosceles triangle EFG have the same perimeter.

Work out the length of FG

Answer(b) $FG = \dots\dots\dots \text{ cm}$ [2]

www.Q8Maths.com

10 The cost of a cup of tea is t cents.

The cost of a cup of coffee is $(t + 5)$ cents.

The total cost of 7 cups of tea and 11 cups of coffee is 2215 cents.

Find the cost of one cup of tea.

Answer cents [3]

www.Q8Maths.com

- 10 Pavan saves \$ x each month.
His two brothers **each** save \$4 more than Pavan each month.

Altogether the three boys save \$26 each month.

- (a) Write down an equation in x .

Answer(a)

[1]

- (b) Solve your equation to find the amount Pavan saves each month.

Answer(b) \$ [2]

www.Q8Maths.com

- 7 The solutions of the equation $x^2 - 6x + d = 0$ are both integers.
 d is a prime number.

Find d

Answer $d =$ [3]

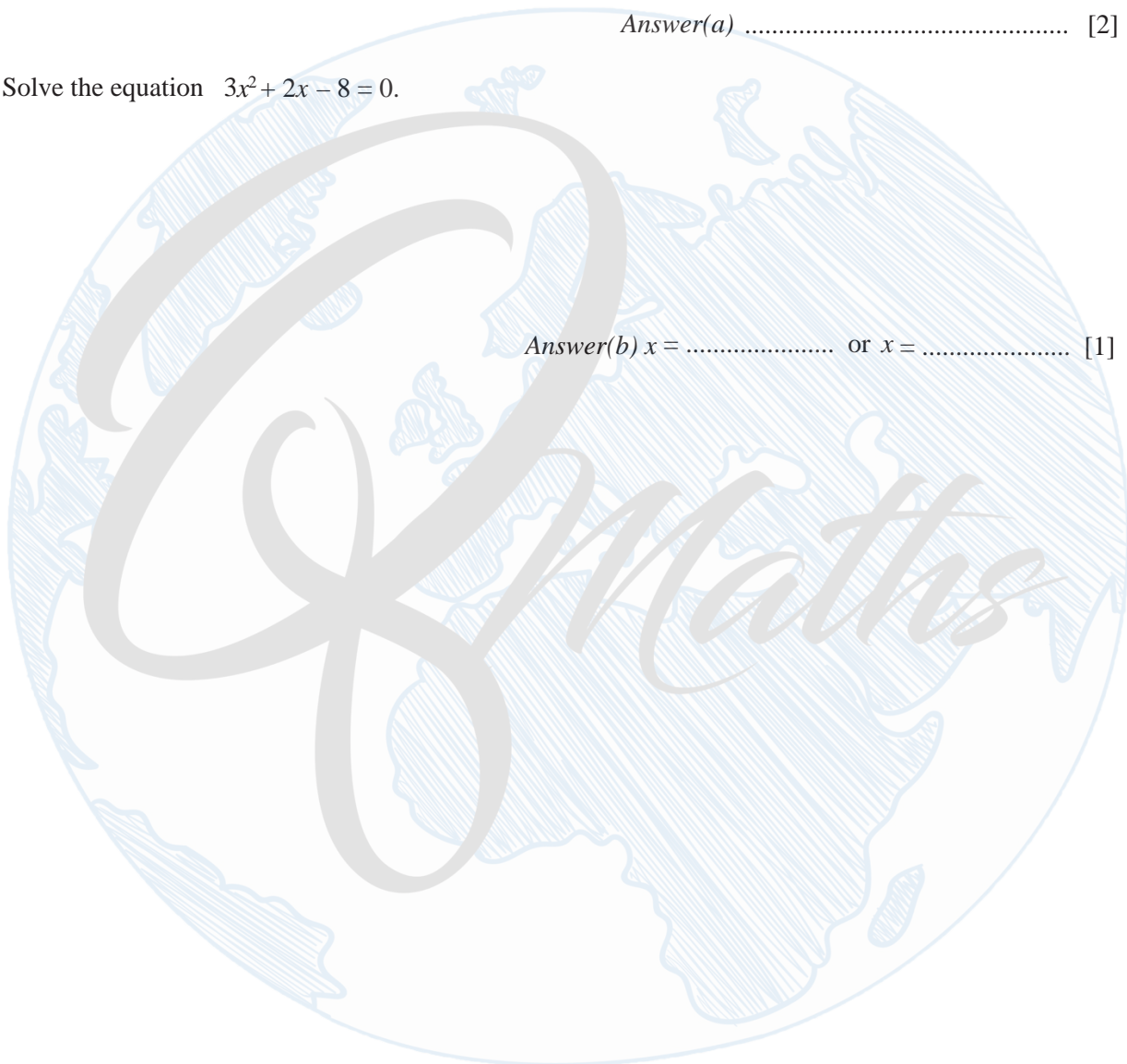
www.Q8Maths.com

12 (a) Factorise $3x^2 + 2x - 8$.

Answer(a) [2]

(b) Solve the equation $3x^2 + 2x - 8 = 0$.

Answer(b) $x = \dots\dots\dots$ or $x = \dots\dots\dots$ [1]



www.Q8Maths.com

- 14 Solve the equation $2x^2 + 3x - 6 = 0$.
Show all your working and give your answers correct to 2 decimal places.

Answer $x =$ or $x =$ [4]

www.Q8Maths.com

20 Solve the equation.

$$x^2 - 8x + 6 = 0$$

Show all your working and give your answers correct to 2 decimal places.

Answer $x =$ or $x =$ [4]

www.Q8Maths.com

- 15 Solve the equation $2x^2 + 6x - 3 = 0$.
Show your working and give your answers correct to 2 decimal places.



Answer $x =$ or $x =$ [4]

www.Q8Maths.com

- 15 Use the quadratic equation formula to solve

$$2x^2 + 7x - 3 = 0 .$$

Show all your working and give your answers correct to 2 decimal places.



Answer $x = \dots\dots\dots$ or $x = \dots\dots\dots$ [4]

www.Q8Maths.com

14 Solve the equation.

$$2x^2 + x - 2 = 0$$

Show your working and give your answers correct to 2 decimal places.



Answer $x = \dots\dots\dots$ or $x = \dots\dots\dots$ [4]

www.Q8Maths.com

- 19 Solve the equation $5x^2 - 6x - 3 = 0$
Show all your working and give your answers correct to 2 decimal places.

Answer $x = \dots\dots\dots$ or $x = \dots\dots\dots$ [4]

- 21 Solve the equation $3x^2 + 4x - 5 = 0$.
Show all your working and give your answers correct to 2 decimal places.

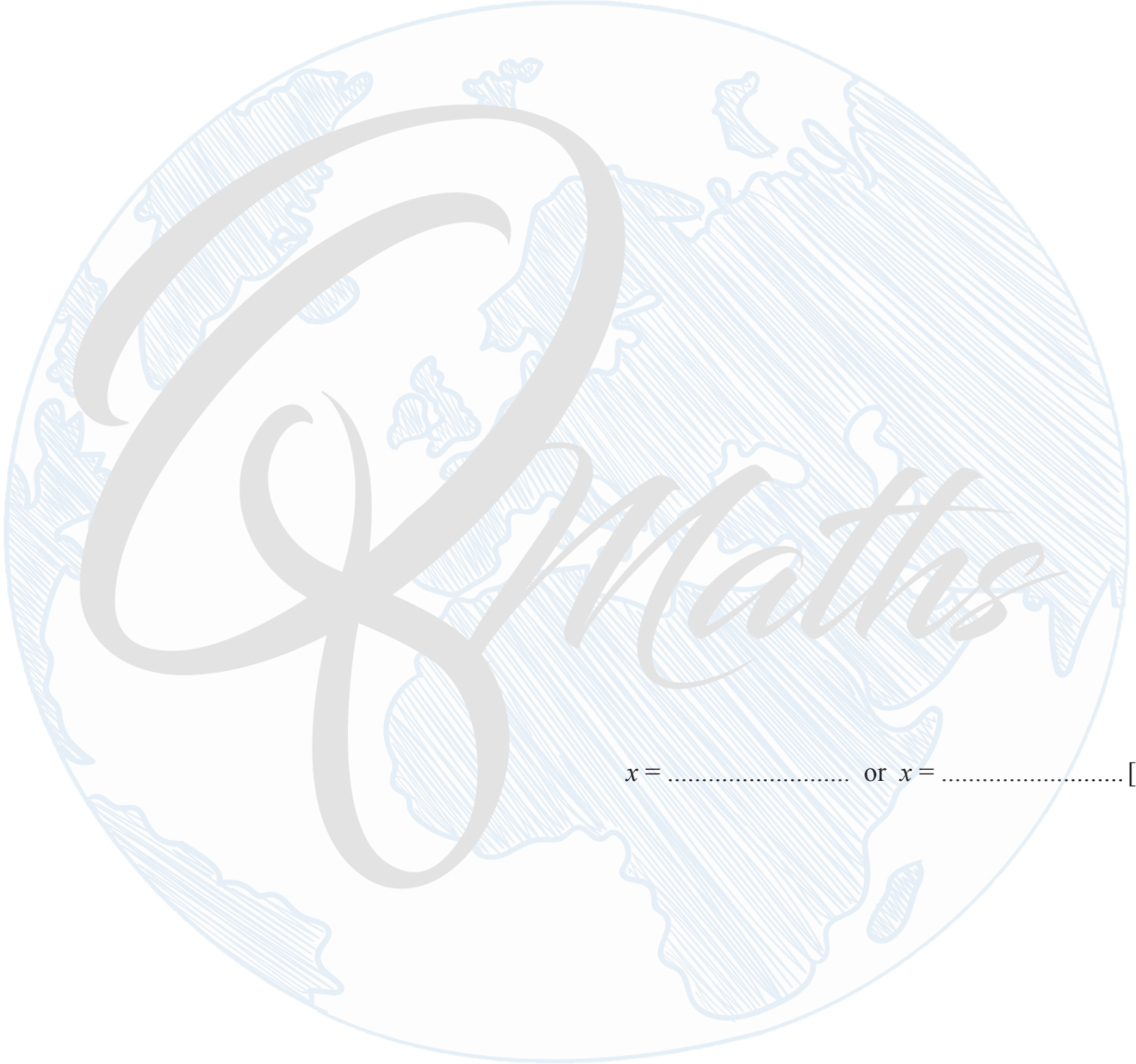
Answer $x = \dots\dots\dots$ or $x = \dots\dots\dots$ [4]

- 17 Solve the equation $3x^2 - 11x + 4 = 0$
Show all your working and give your answers correct to 2 decimal places.

$x = \dots\dots\dots$ or $x = \dots\dots\dots$ [4]

www.Q8Maths.com

- 23 Solve the equation $2x^2 + 3x - 3 = 0$.
Show all your working and give your answers correct to 2 decimal places.



$x = \dots\dots\dots$ or $x = \dots\dots\dots$ [4]

www.Q8Maths.com

13 Solve the inequality.

$$2x + 5 < \frac{x - 1}{4}$$

Answer

[3]



www.Q8Maths.com

29) June 2012 V2

- 6 x is a positive integer and $15x - 43 < 5x + 2$.

Work out the possible values of x .

Answer [3]

30) June 2012 V3

- 4 Solve the inequality.

$$3y + 7 \leq 2 - y$$

Answer [2]

www.Q8Maths.com

- 9 Solve the inequality.

$$\frac{2x-3}{5} - \frac{x}{3} \leq 2$$

Answer [3]

- 16 Solve the inequality.

$$\frac{x}{2} + \frac{x-2}{3} < 5$$

Answer [4]

www.Q8Maths.com

8 Solve the inequality.

$$3x - 1 \leq 11x + 2$$

Answer [2]



www.Q8Maths.com

34) June 2013 V2

18 Solve $6x + 3 < x < 3x + 9$ for **integer** values of x

Answer [4]

35) June 2013 V3

14 (a) Solve $3n + 23 < n + 41$.

Answer(a) [2]

(b) Factorise completely $ab + bc + ad + cd$.

Answer(b) [2]

www.Q8Maths.com

15 Solve the inequality for positive integer values of x .

$$\frac{21+x}{5} > x + 1$$

Answer [4]



www.Q8Maths.com

- 9 Solve the inequality.

$$5t + 23 < 17 - 2t$$

Answer [2]



www.Q8Maths.com

4 Solve the inequality.

$$6n + 3 > 8n$$

..... [2]



www.Q8Maths.com

39) June 2016 V2

8 Solve the inequality $\frac{x}{3} + 5 > 2$.

..... [2]

40) November 2016 V2

7 Find the positive integers that satisfy the inequality $t + 2 > 3t - 6$.

..... [3]

41) June 2018 V1

12 Solve the inequality.

$$3n - 5 > 17 + 8n$$

www.Q8Maths.com [2]