

A19...Solving Inequalities

OCR

(ii) $94 = 4 + 7.5x$

(ii) $x = \dots\dots\dots$ [2]

(iii) $2x > 7$

(iii) $\dots\dots\dots$ [1]

(c) Factorise fully.

$$2x^2 + 4x$$

(c) $\dots\dots\dots$ [2]

(ii) $94 = 4 + 7.5x$

$$x \rightarrow \textcircled{\times 7.5} \rightarrow \textcircled{+4} \rightarrow 94$$

$$12 \leftarrow \div 7.5 \leftarrow \textcircled{-4} \leftarrow 94$$

(ii) $x = \dots\dots\dots 12 \dots\dots\dots [2]$

(iii) $2x > 7$

$$x > \frac{7}{2}$$

(iii) $\dots\dots\dots x > 3.5 \dots\dots\dots [1]$

(c) Factorise fully.

$2x^2 + 4x$

$$2x(x+2)$$

(c) $\dots\dots\dots 2x(x+2) \dots\dots\dots [2]$

(c) Solve.

A19 $3x - 2 \leq 22$

(c) [2]

(c) Solve.

A19

$$3x - 2 \leq 22$$

$$3x \leq 24$$

$$x \leq \frac{24}{3}$$

$$x \leq 8$$

(c) $x \leq 8$ [2]

10 (a) Solve the inequality.

$$3x - 2 > 10$$

(a) [2]

(b) Solve.

$$6x + 2 = 5 - 4x$$

(b) $x =$ [3]

10 (a) Solve the inequality.

A19 $3x - 2 > 10$

$$3x - 2 > 10$$

$$3x > 12$$

$$x > \frac{12}{3}$$

$$x > 4$$

(a) $x > 4$ [2]

(b) Solve.

A14/15 $6x + 2 = 5 - 4x$

$$6x + 4x = 5 - 2$$

$$10x = 3$$

$$x = \frac{3}{10}$$

(b) $x = \frac{3}{10}$ or 0.3 [3]

Edexcel

30 Solve $3(n - 1) < 21$

A19

.....
(Total for Question 30 is 2 marks)

30 Solve $3(n - 1) \leq 21$

A19

$$3(n-1) = 21,$$

$$n \rightarrow (-1) \rightarrow (\times 3) \rightarrow 21$$

$$8 \quad (+1) \leftarrow (\div 3) \leftarrow 21$$

$$n = 8 \quad \times$$

$$n < 8 \quad \checkmark$$

(Total for Question 30 is 2 marks)

(c) Solve $3x + 5 \geq x + 17$

A19

.....
(3)

(Total for Question 19 is 7 marks)

(c) Solve $3x + 5 \geq x + 17$

A19

$$3x + 5 \geq x + 17$$

$$3x - x \geq 17 - 5$$

$$2x \geq 12$$

$$x \geq 6$$

$$\underline{x \geq 6} \quad \checkmark$$

(3)

(Total for Question 19 is 7 marks)

20 n is an integer such that $3n + 2 \leq 14$ and $\frac{6n}{n^2 + 5} > 1$

A19
A63 Find all the possible values of n .

.....
(Total for Question 20 is 5 marks)

20 n is an integer such that $3n + 2 \leq 14$ and $\frac{6n}{n^2 + 5} > 1$

A19

A63

Find all the possible values of n .

$$\left. \begin{array}{l} 3n + 2 \leq 14 \\ 3n \leq 12 \\ n \leq 4 \end{array} \right\}$$

$$\frac{6n}{n^2 + 5} > 1$$

$$6n > 1(n^2 + 5)$$

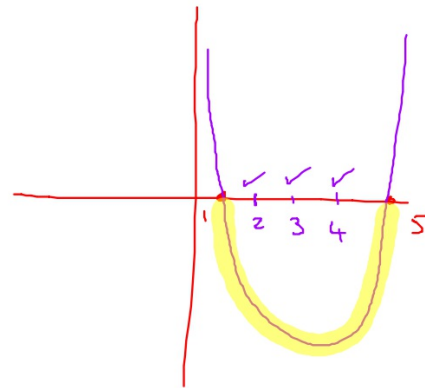
$$0 > n^2 + 5 - 6n$$

$$n^2 - 6n + 5 < 0$$

$$(n - 5)(n - 1) < 0$$

$$n = 5 \quad n = 1$$

Video created by W Neill



2, 3, 4 ✓

(Total for Question 20 is 5 marks)

AQA

31 (b) Solve $7x + 6 > 1 + 2x$

A19

[2 marks]

Answer _____

31 (b) Solve $7x + 6 > 1 + 2x$

A19

[2 marks]

$$7x + 6 > 1 + 2x$$

$$7x - 2x > 1 - 6$$

$$5x > -5$$

Answer $x > -1$ ✓

Video created by W Neill

28 Solve $5(x + 3) < 60$

[2 marks]

A19

Answer _____

28 Solve $5(x + 3) < 60$

[2 marks]

A19

$$x \rightarrow (+3) \rightarrow (x5) \rightarrow 60$$

$$9 \leftarrow (-3) \leftarrow (x5) \leftarrow 60$$

12

$$x = 9x$$

Answer $x < 9$ ✓

28

Solve

$$8 > 3 - \frac{1}{2}x$$

[2 marks]

A19

Answer _____

28

Solve

$$8 > 3 - \frac{1}{2}x$$

A19

[2 marks]

$$8 - 3 > -\frac{1}{2}x$$

$$5 > -\frac{1}{2}x$$

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

$$-\frac{5}{1/2} < x$$

$$-10 < x \checkmark$$

$$-2 < 3$$

$$+2 > -3$$

Answer

$$x > -10 \checkmark$$

14 Solve $-3x > 6$

[1 mark]

A19

Answer _____

14 Solve $-3x > 6$

[1 mark]

A19

$$-x > 2$$

$$x < -2$$

Answer

$$x < -2 \checkmark$$

$$x = -2$$

$$x = -3$$

$$-3x - 2 = 6$$

$$-3x - 3 = 9$$