

1. List the integer values of n for

$$3 \leq n < 8.$$

.....

[2]

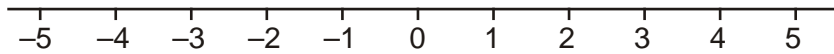
2. (i) Solve.

$$4x - 5 < 9$$

.....

[2]

- (ii) Represent your solution to part (a)(i) on the number line below.



[1]

3. (a) List the integer values, n , which satisfy

$$3 < n \leq 7.$$

.....

[2]

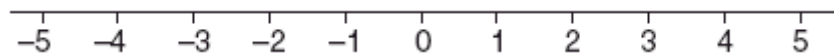
- (b) (i) Solve this inequality.

$$3x - 2 > 4$$

.....

[2]

- (ii) Show your solution to part (i) on the number line below.



[1]

4. (a) List the integer values of x such that

$$-2 \leq x < 3$$

.....

(2)

- (b) Solve the inequality

$$x^2 > 64$$

Answer

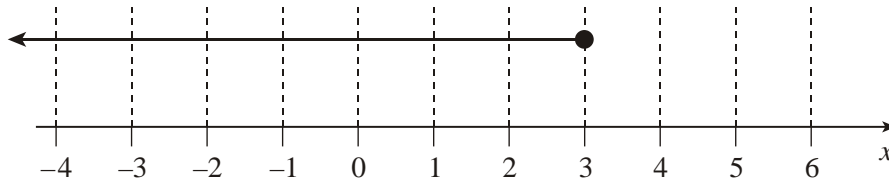
(2)

5. (a) Solve the inequality $3(x - 2) \leq 9$

Answer

(3)

- (b) The inequality $x \leq 3$ is shown on the number line below.



Draw another inequality on the number line so that only the following integers satisfy both inequalities

$\{-2, -1, 0, 1, 2, 3\}$

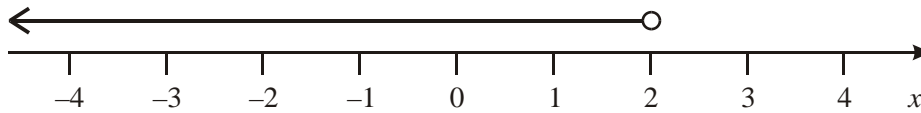
(1)

6. (a) Solve the inequality $2x + 3 \geq 1$

Answer

(2)

- (b) Write down the inequality shown by the following diagram.



Answer

(1)

- (c) Write down all the integers that satisfy both inequalities shown in parts (a) and (b).

Answer

(1)

7. Solve.

$$15 + 4n \leq 3 - 2n$$

.....

[3]

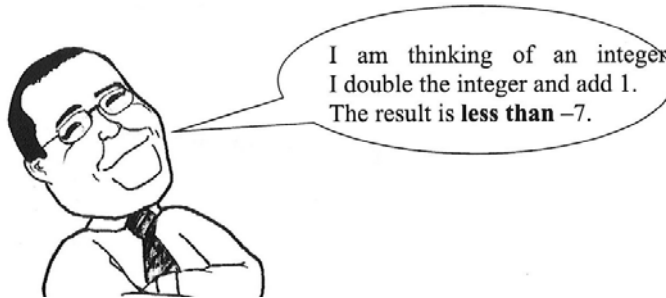
8. Solve.

$$5n + 3 < 2n - 9$$

.....

[2]

9. (a) A mathematics teacher says



What is the **largest** integer the teacher could have thought of?

Answer

(2)

(b) x and y are integers.

$$0 < x \leq 3$$

$$y < x$$

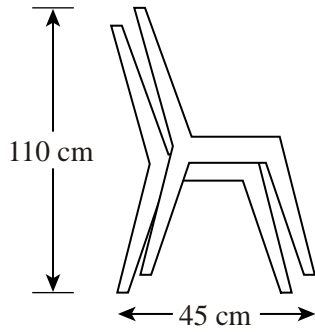
$$x + y < 5$$

Write down **two** pairs of values of x and y which satisfy all three inequalities.

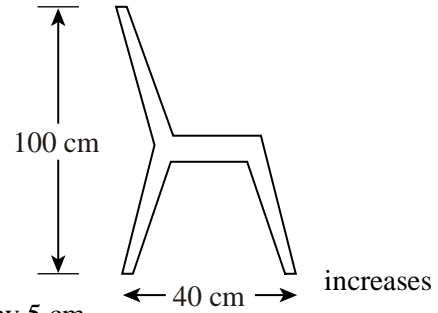
Answer (.....,) and (.....,

(2)

10. A stacking chair is 100 cm high and 40 cm wide.



When a chair is added to a stack it the height by 10 cm and the width by 5 cm.



(a) Find an expression for the height of a stack of n chairs.

.....

Answer

(2)

(b) A rule for the maximum number of chairs that can be stacked before they fall over is

$$4n + 35 < 70$$

What is the maximum number of chairs that can be stacked?

Answer

(3)

11. (a) In each part give one example to show that the statement is **false**.
You must show your working.

(i) For every non-zero number y , $2y > y$.

.....

[1]

(ii) For every non-zero number x , $x^2 > x$.

.....

[2]

(b) Given that $-5 \leq x \leq 3$ and $-7 \leq y \leq 4$, find

(i) the largest value of x^2 ,

.....

[1]

(ii) the largest value of $y - x$,

.....

[1]

(iii) the smallest value of xy .

.....

[1]