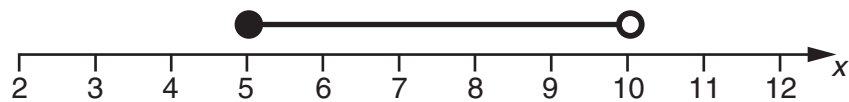


- 1 (a) (i) Write the algebraic inequality represented on this number line.



(a)(i) [3]

- (ii) Write down all the integers that satisfy the inequality in part (a)(i).

(ii) [2]

- (b) Solve.

$$-5x > 20$$

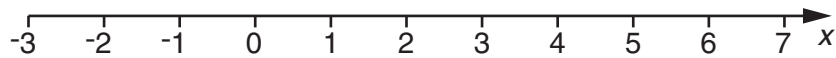
(b) [2]

2 (a) Solve this inequality.

$$7x > 3x + 6$$

(a) [2]

(b) Represent $x \leq 2$ on this number line.



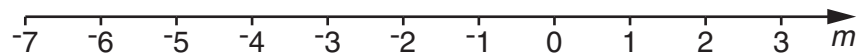
[2]

- 3 (a) (i) Solve this inequality.

$$2m + 6 > -4$$

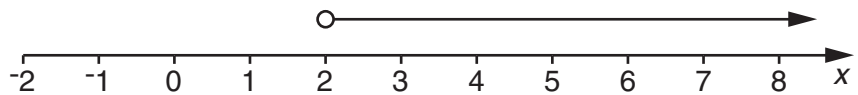
(a)(i) _____ [2]

- (ii) Represent your answer to part (a)(i) on this number line.



[1]

- (b) This diagram represents the solution of another inequality.



What is the smallest integer that x can be?

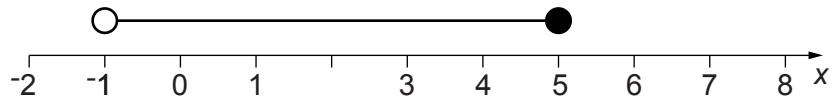
(b) _____ [1]

4 (a) Solve this inequality.

$$5x - 2 < 18$$

(a) _____ [2]

(b) This diagram represents the solution of $p < 2x + 7 \leq q$.



Find the integers p and q .

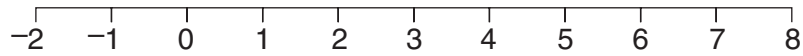
(b) $p =$ _____ $q =$ _____ [3]

5 (a) Solve this inequality.

$$3x - 2 \leq 10$$

(a) _____ [2]

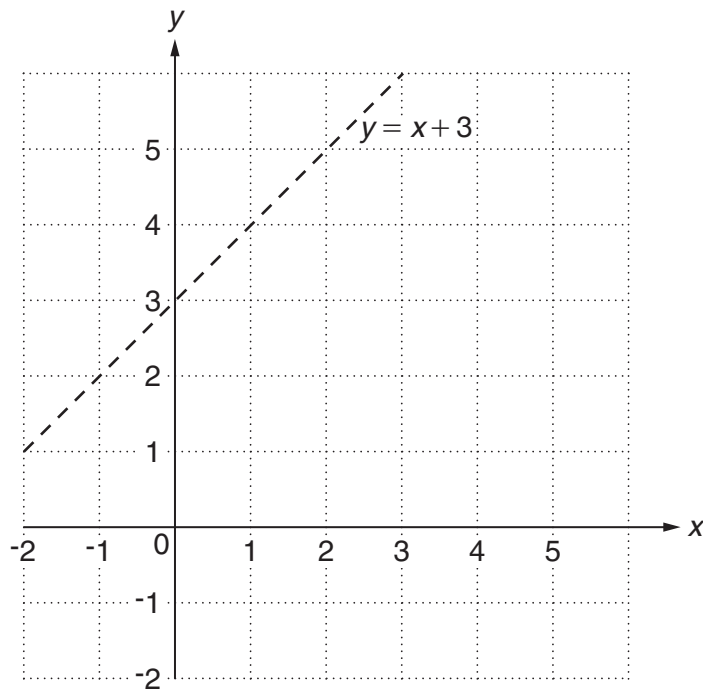
(b) Represent your solution to part (a) on this number line.



[1]

6 In this question, represent the inequalities by shading the area **not** required.

On the grid below, the line $y = x + 3$ is shown.



(a) Indicate clearly the region $y < x + 3$ by shading the area **not** required. [1]

(b) Indicate clearly the region $x + y < 5$.

Shade the area **not** required. [2]

(c) You are given that x and y are integers that satisfy these **three** inequalities.

$$\begin{aligned}
 y &< x + 3 \\
 x + y &< 5 \\
 y &> 2
 \end{aligned}$$

Use your diagram to find x and y .

(c) $x =$

$y =$ [3]

7 (a) Solve this inequality.

$$3y - 11 > 25$$

(a) [2]

(b) Find **all** the **integer** values of w that satisfy this inequality.

$$9 < 3w < 20$$

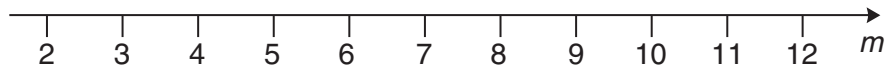
(b) [2]

8 (a) Solve this inequality.

$$5m + 8 < 43$$

(a) _____ [2]

(b) Represent your solution to part (a) on this number line.



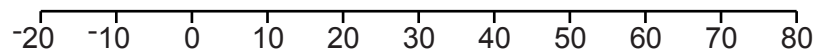
[1]

9 (a) Solve this inequality.

$$\frac{x}{4} - 5 <$$

(a) _____ [2]

(b) Represent your solution to part (a) on this number line.



[1]

10 Beads can be bought in packets, each containing x beads.

Lizzie has 7 packets of beads and 2 extra beads.

Grace has 5 packets of beads and 25 extra beads.

Grace has more beads than Lizzie.

(a) Write an inequality in x to show this information.

(a) _____ [1]

(b) Solve your inequality and hence write down the largest number of beads that could be in each packet.

(b) _____ [4]

11 Solve this inequality.

$$5n + 2 > 2n - 13$$

[3]

12 Solve this inequality.

$$7x + 5 \leq 47$$

_____ [2]