Solutions by
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GCSE (9-1) Grade 4

Inequalities



Instructions

Use **black** ink or ball-point pen.
Fill in the boxes at the top of this page with your name.
Answer **all** questions.
Answer the questions in the spaces provided
– there may be more space than you need.
Show all your working out

Information

The marks for **each** question are shown in brackets.
Use this as a guide as to how much time to spend on each question.
Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed

Advice

Read each question carefully before you start to answer it
Attempt every question
Check your answers if you have time at the end

1. $-1 \leq n < 4$

n is an integer.

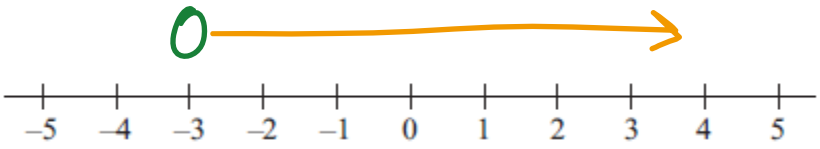
Write down all the possible values of n.

-1, 0, 1, 2, 3

(2 marks)

2. (a) $x > -3$

Show this inequality on the number line.



(2)

(b) Solve the inequality $7y - 34 \leq 8$

$7y \leq 42$

$y \leq 6$

$y \leq 6$

(2)

(c) Write down the integer values of x that satisfy the inequality

$-2 \leq x < 3$

-2, 0, 1, 2

(2)

(6 marks)

3. $-2 \leq n < 5$

n is an integer.

(a) Write down all the possible values of n.

$-2, -1, 0, 1, 2, 3, 4$

.....

(2)

(b) Solve the inequality $4x + 1 > 11$

$4x > 10$

$x > \frac{10}{4}$

$x > 2.5$

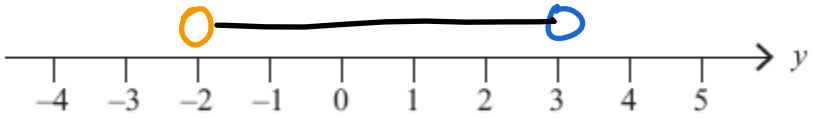
.....

(2)

(4 marks)

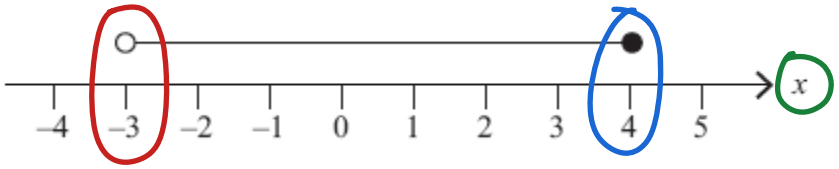
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4. (a) On the number line below, show the inequality $-2 < y < 3$



(1)

(b) Here is an inequality, in x, shown on a number line.



Write down the inequality.

$-3 < x \leq 4$

.....

(2)

(c) Solve the inequality $4t - 5 > 11$

$4t > 16$

$t > 4$

$t > 4$

.....

(2)

(5 marks)

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5. (a) n is an integer.

$-1 \leq n < 4$

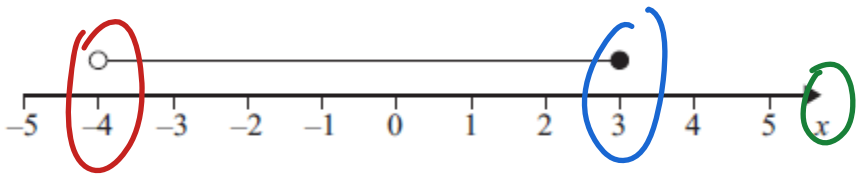
List the possible values of n.

$-1, 0, 1, 2, 3$

.....

(2)

(b)



Write down the inequality shown in the diagram.

$-4 < x \leq 3$

.....

(2)

(c) Solve $3y - 2 > 13$

$3y > 15$

$y > \frac{15}{3}$

$y > 5$

.....

(2)

(6 marks)

---

6. $-3 < n \leq 1$

n is an integer.

(a) Write down all the possible values of n.

$-2, -1, 0, 1$

.....

(2)

(b) Solve the inequality $3p - 7 > 11$

$3p > 18$

$p > \frac{18}{3}$

$p > 6$

.....

(2)

(4 marks)

---

7. n is an integer.

$-3 < n < 4$

(a) Write down all the possible values of n.

$-2, -1, 0, 1, 2, 3$

.....

(2)

(b) Solve $2x - 7 \leq 11$

$2x \leq 18$

$x \leq 9$

$x \leq 9$

.....

(2)

(4 marks)

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8. (a) (i) Solve the inequality

$5x - 7 < 28$

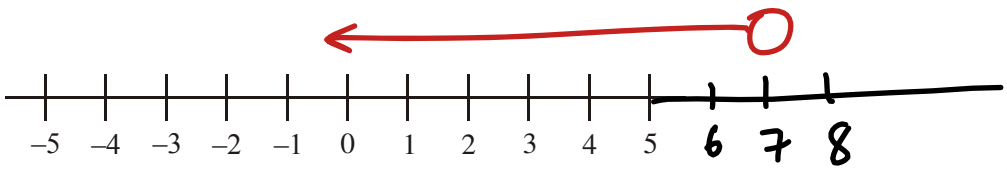
$5x < 35$

$x < \frac{35}{5}$

$x < 7$

.....

(ii) On the number line, represent the solution set to part (i).



(3)

n is an integer such that $-4 \leq 2n < 3$.

$-2 \leq n < 1.5$

(b) Write down the possible values of n.

$-2, -1, 0, 1$

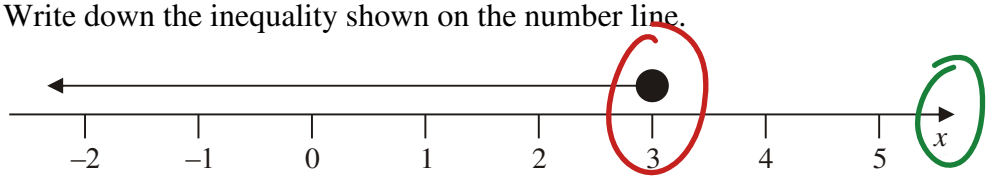
.....

(3)

(6 marks)

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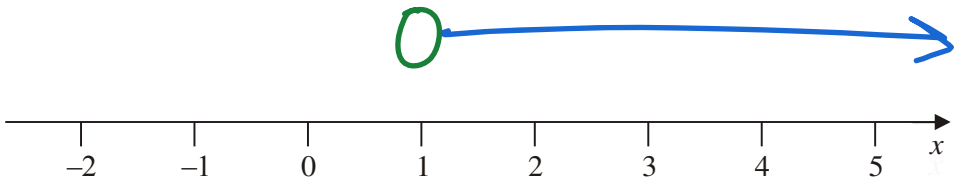
9. (i) Write down the inequality shown on the number line.



$x \leq 3$

.....

(ii) Show the inequality $x > 1$ on the number line below.



(3 marks)

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10. (i) Solve the inequality $7x - 3 > 18$

$7x > 21$

$x > \frac{21}{7}$

$x > 3$

.....

x is a whole number such that $7x - 3 > 18$

(ii) Write down the smallest value of x.

4

.....

(4 marks)

---

11. (a) Solve $5x + 12 < 17$

(2)

$5x < 5$

$x < 1$

$x < 1$

(b) Solve the inequality $3(2y + 1) > 10$

(2)

$6y + 3 > 10$

$6y > 7$

$y > \frac{7}{6}$

$y > \frac{7}{6}$

(4 marks)

12. (a) Solve the inequality $4x - 3 < 7$

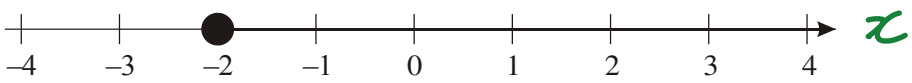
$4x < 10$

$x < \frac{10}{4}$

$x < 2.5$

(2)

An inequality is shown on the number line.



(b) Write down the inequality.

$x \geq -2$

(2)

(c) n is a whole number such that

$$6 \leq 3n < 15$$

List all the possible values of n.

$2 \leq n < 5$

$-2, -1, 0, 1, 2, 3, 4$

(2)

(6 marks)

13. m is an integer such that $-2 < m \leq 3$

(a) Write down all the possible values of m.

$-1, 0, 1, 2, 3$

.....

(2)

(b) Solve $7x - 9 < 12$

$7x < 21$

$x < \frac{21}{7}$

$x < 3$

.....

(2)

(4 marks)