

Name: _____

Exam Style Questions

Inequalities



Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

Revision for this topic

www.corbettmaths.com/contents

[Video 176](#)

[Video 177](#)

[Video 178](#)

[Video 179](#)



1. Match each inequality to the correct description.

$x > 4$ ~~————~~ x is less than or equal to 4

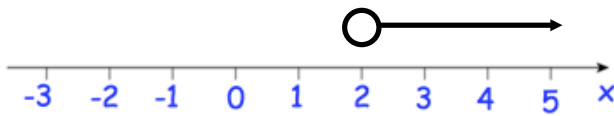
$x \leq 4$ ~~————~~ x is less than 4

$x < 4$ ~~————~~ x is greater than 4

$x \geq 4$ ———— x is greater than or equal to 4

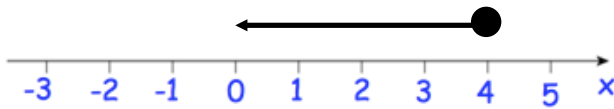
(2)

2. Represent the inequality $x > 2$ on this number line.



(1)

3. Represent the inequality $x \leq 4$ on this number line.



(1)

4. Solve the inequality $3x - 8 > 16$

$$3x > 24$$

$$x > 8$$

$$\underline{x > 8}$$

(2)

5. (a) Solve the inequality $2x - 1 < 9$

$$2x < 10$$

$$\underline{x < 5}$$

(2)



(b) Write down the inequality shown on the number above

$$\underline{x > -2}$$

(1)

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

$$\underline{-1, 0, 1, 2, 3, 4}$$

(1)

6. (a) n is an integer.

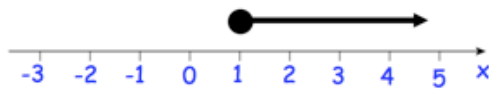
$$-2 < n \leq 3$$

List the possible values of n .

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

(2)

- (b)



Write down the inequality shown in the diagram.

$$\underline{x \geq 1}$$

(2)

- (c) Solve $3y - 4 > 17$

$$3y > 21$$

$$\underline{y > 7}$$

(2)

-
7. (a) Solve $3x + 4 \leq 13$

$$3x \leq 9$$
$$x \leq 3$$

$$\underline{x \leq 3}$$

(2)

- (b) Write down **all** the integer values of x that satisfies $-2 \leq 2x < 6$

$$-1 \leq x < 3$$

$$\underline{-1 \ 0 \ 1 \ 2}$$

(2)

8. Write down **one** integer which satisfies the inequality $6x > 42$

10

.....
(1)

9. Solve the inequality $5x + 2 < 6$

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

.....
(2)

10. (a) Solve the inequality $4x + 6 \geq 2$

$$4x \geq -4$$

$$x \geq -1$$

.....
(2)

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



$$x < 3$$

.....
(1)

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

-1, 0, 1, 2

.....
(1)

11. (a) Solve this inequality

$$5x - 2 < 22$$

$$5x < 24$$

$$x < \frac{24}{5}$$

(2)

- (b) Given also that $x > 1$ and x is an integer.
Write down all the possible values of x .

$$\uparrow$$
$$4\frac{4}{5}$$

$$2, 3, 4$$

(1)

-
12. Solve the inequality $2(3x - 5) \geq 43$

$$6x - 10 \geq 43$$

$$6x \geq 53$$

$$x \geq \frac{53}{6}$$

$$\text{or } x \geq 8\frac{5}{6}$$

(2)

-
13. Solve the inequality $2x + 9 > 19 - 8x$

$$10x + 9 > 19$$

$$10x > 10$$

$$x > 1$$

$$x > 1$$

(2)

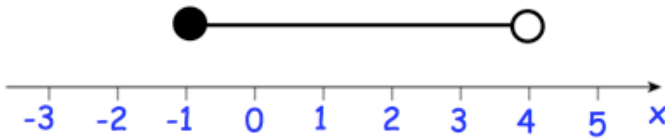
14. (a) Solve the inequality $3(x - 4) \leq 15$

$$3x - 12 \leq 15$$
$$3x \leq 27$$

$$x \leq 9$$

.....
(2)

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



$$-1 \leq x < 4$$

.....
(2)

-
15. (a) Solve the inequality $3x + 7 < 20$

$$3x < 13$$

$$x < \frac{13}{3} \quad \text{or} \quad x < 4\frac{1}{3}$$

.....
(2)

- (b) Write down the integer value of x that satisfies $16 \leq 3x < 20$

$$\frac{16}{3} \leq x < \frac{20}{3}$$

$$5.33... \leq x < 6.66...$$

6

.....
(2)

16. (a) Solve the inequality $9x + 4 < 5x - 14$

$$\begin{aligned}4x + 4 &< -14 \\4x &< -18 \\x &< -\frac{18}{4}\end{aligned}$$

$$\begin{aligned}x &< -\frac{9}{2} \\x &< -4.5\end{aligned}$$

- (b) y is an integer.

Write down all the solutions of the inequality $-8 \leq 2y < 0$

$$-4 \leq y < 0$$

$$\begin{aligned}-4 & -3 & -2 & -1 \\ \hline\end{aligned}$$

(3)

-
17. $-4 \leq n < 1$

n is an integer.

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

$$-4 \quad -3 \quad -2 \quad -1 \quad 0$$

(2)

- (b) Solve the inequality $4x + 11 < 27$

$$\begin{aligned}4x &< 16 \\x &< 4\end{aligned}$$

(2)

18. Lee is y years old.

Toby is 8 years younger than Lee. $y-8$

The sum of their ages is less than 41.

(a) Write down in terms of y , an inequality to show this information.

$$\underline{2y - 8 < 41} \quad (2)$$

(b) Work out the oldest age that Lee can be.

Give your answer as a whole number of years.

$$\begin{aligned} 2y &< 49 \\ y &< 24.5 \end{aligned}$$

$$\underline{24} \quad (3)$$

19. x is an integer.

Write down all the solutions of the inequality $3 < 2x + 1 < 13$

$$3 < 2x + 1 < 13$$

$$2 < 2x < 12$$

$$1 < x < 6$$

$$\underline{2, 3, 4, 5} \quad (3)$$

20. Annie, Beth and Carly go shopping.

Annie spend m pounds.

Beth spend twice as much as Annie.

Carly spend 5 pounds more than Annie.

$2m$
 $m+5$

The total amount of money spent, in pounds, is more than £60.

(a) Write down, in terms of m , an inequality to show this information.

$$4m + 5 > 60$$

(2)

Each girl spends an whole number of pounds.

(b) Work out the ~~most~~ least each girl could have spent.

$$4m > 55$$
$$m > 13.75$$

Annie £.....¹⁴

Beth £.....²⁸

Carly £.....¹⁹

(4)