

Name: _____

Exam Style Questions

Inequalities



Equipment needed: Calculator, Ruler, Pencil and Pen

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

Videos 176, 177, 178, 179



Answers and Video Solutions



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

$x < 4$

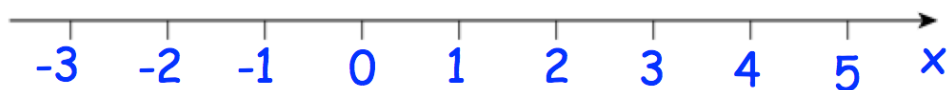
x is greater than 4

$x \geq 4$

x is greater than or equal to 4

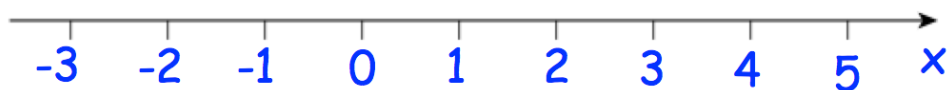
(2)

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



(1)

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



(1)

4. y is greater than or equal to 2



Circle the correct inequality.

$$y > 2$$

$$y \geq 2$$

$$y \leq 2$$

$$y < 2$$

(1)

5. Solve $3x < 24$



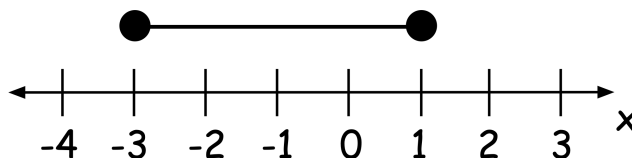
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(1)

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



.....
(2)

7. An inequality is represented on the number line.



Circle the correct inequality

$$-3 < x < 1$$

$$-3 \leq x < 1$$

$$-3 \leq x \leq 1$$

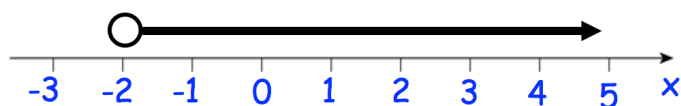
$$-3 < x \leq 1$$

(1)

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



.....
(2)



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

.....
(1)

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

.....
(1)

9. Circle the list of integers that satisfies the inequality $4 \leq n < 8$



4, 5, 6, 7, 8

5, 6, 7, 8

4, 5, 6, 7

5, 6, 7

(1)

10. (a) n is an integer.

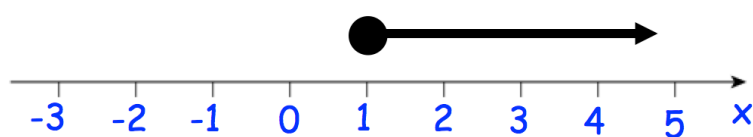


$$-2 < n \leq 3$$

List the possible values of n .

.....
(2)

- (b)



Write down the inequality shown in the diagram.

.....
(2)

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

.....
(2)

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



.....
(1)

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



.....
(2)

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

.....
(2)

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



.....
(2)

14. Write down **all** the integer values of x that satisfies $9 < 4x \leq 28$



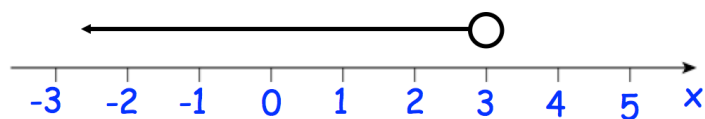
.....
(2)

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



.....
(2)

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



.....
(1)

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

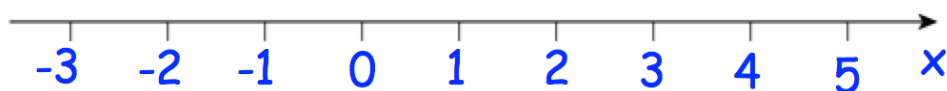
.....
(1)

16. (a) Solve $4n < 9 - 2n$



.....
(2)

- (b) On the number line, show the set of values of x for which $1 < x + 2 < 5$



(2)

-
17. (a) Solve this inequality



$$5x - 2 < 22$$

.....
(2)

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

.....
(1)

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



.....
(2)

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



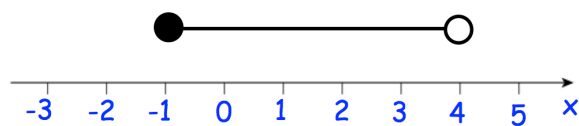
.....
(2)

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



.....
(2)

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



.....
(2)

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



.....
(2)

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

.....
(2)

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



.....
(2)

- (b) y is an integer.

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

.....
(3)

23. $-4 \leq n < 1$



n is an integer.

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

.....
(2)

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

.....
(2)

24. Lee is y years old.



Toby is 8 years younger than Lee.

The sum of their ages is less than 41.

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

.....
(2)

(b) Work out the oldest age that Lee can be.
Give your answer as a whole number of years.

.....
(3)

25. x is an integer.



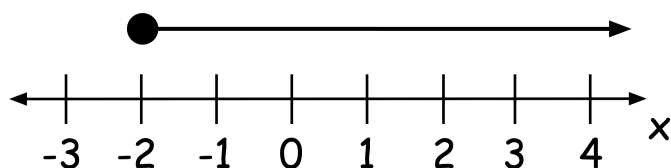
Write down all the solutions of the inequality $3 < 2x + 1 < 13$

.....
(3)

26. Lorcan has been asked to solve the inequality $4x - 2 \geq 9x + 8$



His solution is shown on the number line.



Is Lorcan's solution correct?

Explain your answer.

.....
.....
.....
(3)

27. Annie, Beth and Carly go shopping.



Annie spend m pounds.

Beth spend twice as much as Annie.

Carly spend 5 pounds more than Annie.

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.

.....
(2)

Each girl spends an whole number of pounds.

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

Annie £.....

Beth £.....

Carly £.....

(4)

28. Solve $-5x < 40$



.....
(1)

29. Solve $9x > 5x - 28$



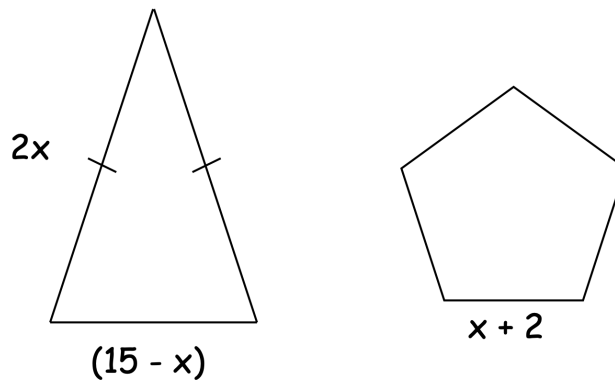
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(2)

30. Solve $\frac{4x}{3} - 7 < 11$



.....
(3)

31. Here is an isosceles triangle and a regular pentagon.
The measurements are in centimetres.



The perimeter of the pentagon is greater than the perimeter of the triangle.

Find the possible values of x

.....
(4)

32. Solve $8 < 10 - \frac{x}{2}$



.....
(3)

33. Write down the largest integer that satisfies $\frac{10 - 4x}{7} > 5$



.....
(3)

34. Given



$$2 \leq y \leq 8$$

$$7 \leq z \leq 12$$

Find $y + z$

.....
(2)

35. x and y are integers



$$x \geq 15$$

$$y > 18$$

Work out the smallest possible value of $3x + y$

.....
(2)