

Topic Check In - 6.04 Algebraic inequalities

1. Put the correct sign $<$, $>$, \leq or \geq in the box.

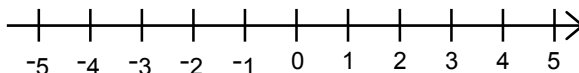
$$5 \quad \square \quad 4$$

2. Put the correct sign $<$, $>$, \leq or \geq in the box.

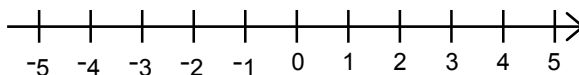
$$-4 \quad \square \quad -3$$

3. Write as an inequality, x is less than or equal to 8.

4. Show on a number line $x < 2$.



5. Show on a number line $-1 \leq x < 3$.



6. Using y to represent age in years, explain in words $y \geq 18$.

7. $x < 2$. Joe says the largest value x can take is 1.9.

Explain why Joe is wrong.

8. x is an integer where $-4 \leq x < 3$.

Zoe says there are 7 possible values for x . Explain why Zoe is correct.

9. $x^2 < 16$ and $x \leq -1$.

Rewrite these two inequalities as a single inequality.

10. A survey is conducted on the topic of reading.

The following question and responses are used.

How many hours on average do you read per week?

Less than 2 hours

Between 2 and 4 hours

Over 4 hours

Using h to represent the number of hours, rewrite the responses using inequalities.

Extension

You are going on a field trip and need to choose where to go. The theme park costs a £100 fee plus £10 per student. The concert costs a £250 fee plus £5 per student. How many students need to go on the trip in order for the concert to be the better deal?



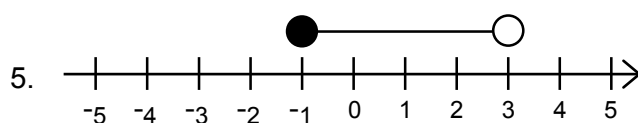
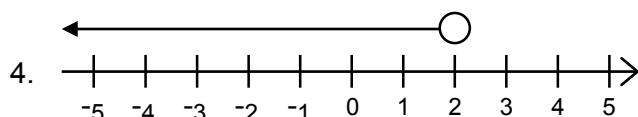
GCSE (9-1) MATHEMATICS

Answers

1. $5 > 4$

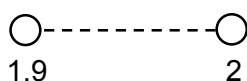
2. $-4 < -3$

3. $x \leq 8$



6. Aged 18 or over or y is greater than or equal to 18.

7. Although 1.9 is a correct value within the stated range it is not the largest.



It could be 1.91 or 1.92, 1.99, 1.999, 1.9999999.

To get the mark it must be clear that there are values between 1.9 and 2.

8. The 7 values are -4, -3, -2, -1, 0, 1, and 2 (but not 3).

9. $-4 < x \leq -1$

10. $h < 2$ $2 \leq h \leq 4$ $h > 4$

Extension

More than 30 people ($100 + 10x > 250 + 5x$)



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Assessment Objective	Qu.	Topic	R	A	G
AO1	1	Use inequality symbols.			
AO1	2	Use inequality symbols with negative numbers.			
AO1	3	Write an inequality from words.			
AO1	4	Show a simple inequality on a number line.			
AO1	5	Show an inequality range on a number line.			
AO2	6	Write an inequality in words.			
AO2	7	Understand an inequality involving decimals.			
AO2	8	Understand an inequality involving integers.			
AO3	9	Write two inequalities as a single inequality.			
AO3	10	Use inequalities to describe continuous data.			

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