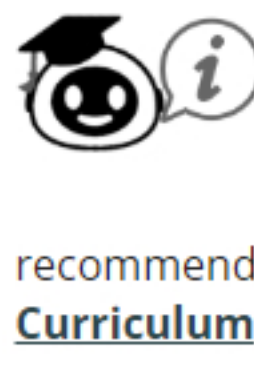


About INTERVALS ON THE NUMBER LINE

In these notes you are going to be able to learn about **INTERVALS ON THE NUMBER LINE** as you go through notes and exercises to help you practice calculating and solving relevant questions. Make sure to go through all the notes, questions and answers and also complete the **Mastery Quizzes** so that you can deepen your understanding and master this topic.

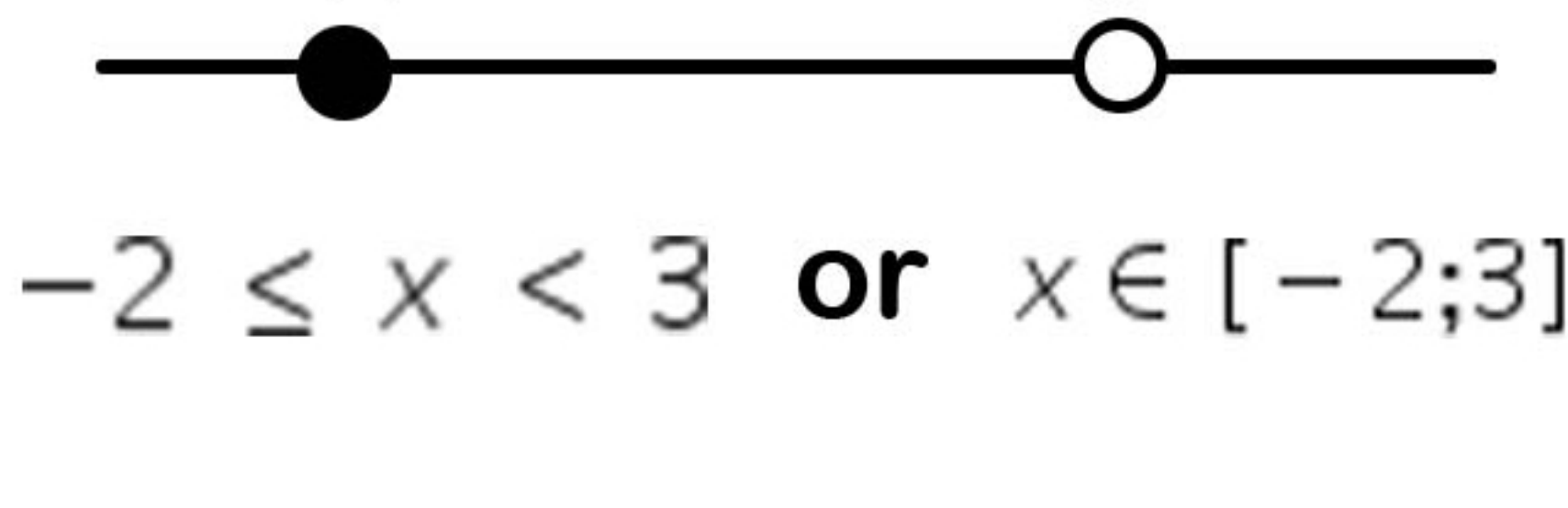
 Note that "INTERVALS ON THE NUMBER LINE" is a sub topic and you can also access more grade 10 notes, questions and answers under the main topic "**Numbers And Number Patterns**" which is one of the recommended learning topics in the [Grade 10 Mathematics Curriculum](#).

What is an interval?

In mathematics, an **interval** refers to a range of numbers between two specified endpoints (upper and/or lower limits).

Examples:

1.



 **Note** that -2 is included and 3 is excluded. And also x must be at least -2 but less than 3 or x is within the range of -2 to 3, including -2 but excluding 3. Therefore its important to know that all real numbers are included in the interval.

Before you continue check it out 

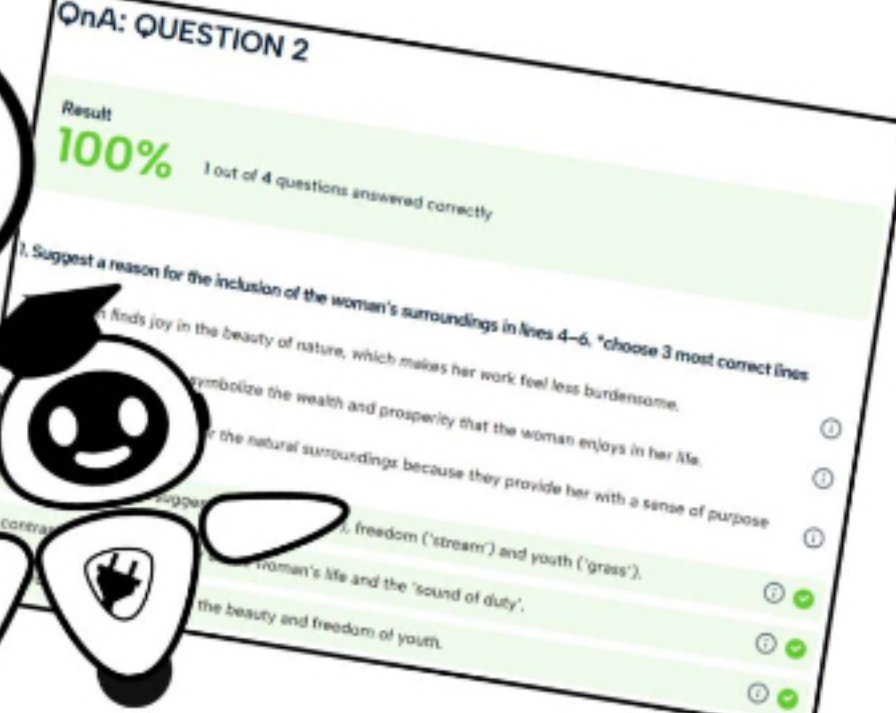
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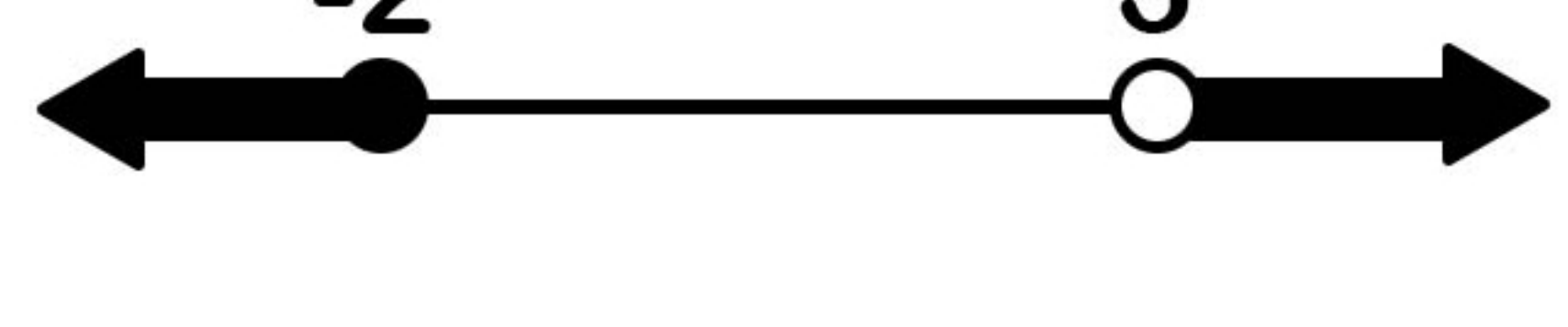


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2.

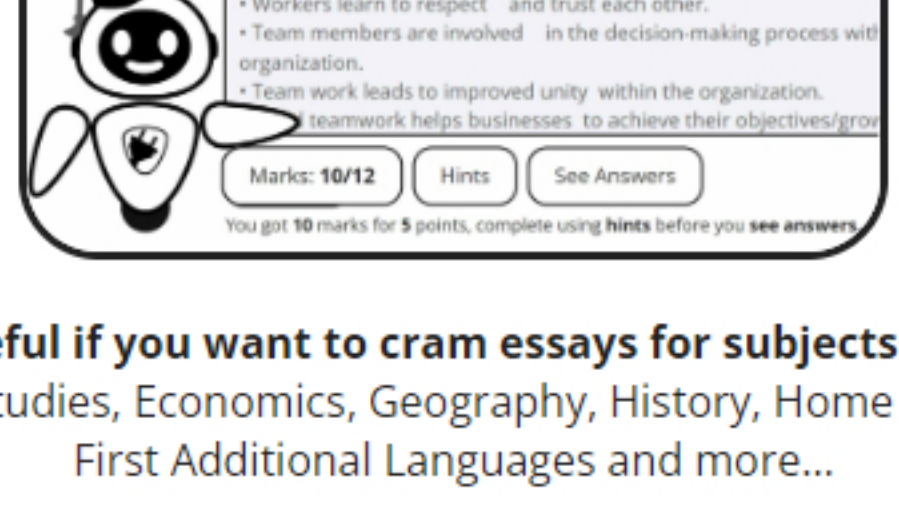


Note This is not an interval

Remember, x is real, i.e x ∈ ℝ

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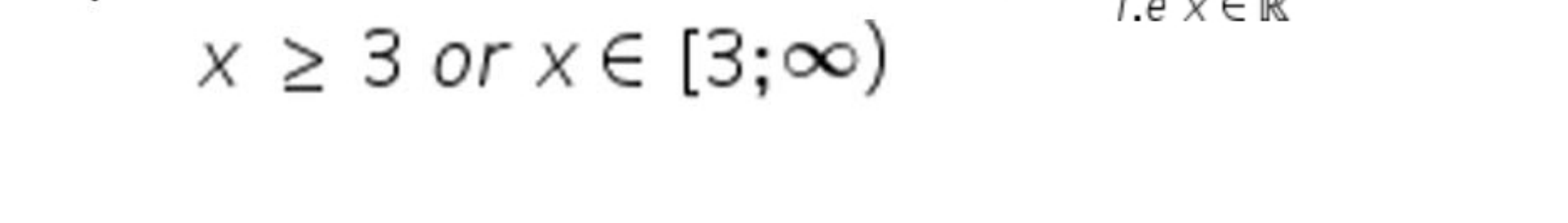
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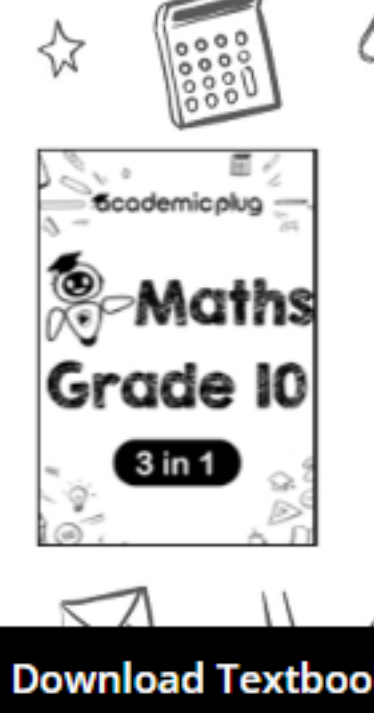
3.



 Note that he minimum value of x is 3.

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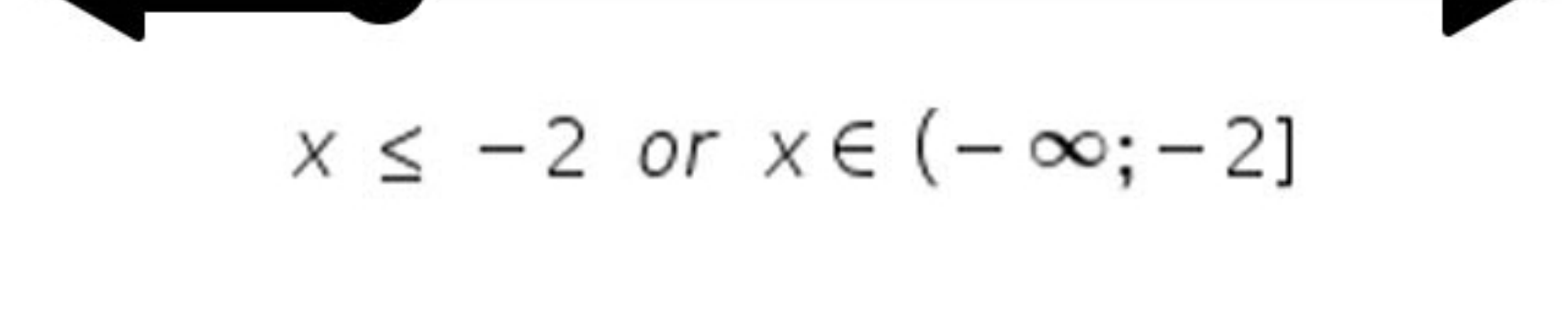
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4.



 Note that he minimum value of x is -2.

Mixed Exercises

1. Write each of the following in interval notation (if applicable) and illustrate each on a number line.

1.1 {x | x ≥ -3 ; x a real no. }

1.2 {x | -5 < x ≤ 2 ; x ∈ ℝ }

1.3 {x | x < 4 ; x ∈ ℝ }

1.4 {x | -1 ≤ x < 4 ; x ∈ ℝ }

The values of x have been represented in set-builder notation through these questions.

2. Rewrite the following in interval notation and algebraic form:

2.1



2.2



3. In what range can you find

3.1 the positive proper fractions

e.g $\frac{1}{3}; \frac{2}{5}; \frac{3}{4}$ etc

3.2 What are proper fractions with a negative value?

3.3 Express all proper fractions in three formats: algebraically, in interval notation, and visually on a number line.

[See Answer](#)

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