Upper 6 Chapter 2

Functions and Graphs

Chapter Overview

1. The Modulus Function

2. Mappings vs Functions, Domain and Range

3. Composite Functions

4. Inverse Functions

5. Transformations of the form $y=|f\left(x\right)|$ or $y=f\left(\left|x\right|\right)$. Combined transformations and transforming the modulus function.

6. Solving modulus problems







The Modulus Function

Example:

1. If $f\left(x\right)=\left|2x-3\right|+1$, find

1. $f(5)$
2. $f(-2)$
3. $f(1)$

Modulus Graphs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| $$x$$ | -2 | -1 | 0 | 1 | 2 |
| $$y$$ |  |  |  |  |  |

$y=|x|$

Examples

1. Sketch $y=|2x-3|$

2. Solve $\left|2x-3\right|=5$



3. Solve $\left|3x-5\right|=2-\frac{1}{2}x$



Test Your Understanding

1. Solve $\left|x+1\right|=2x+5$



2. Solve $\left|4x-1\right|<2x$



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