FMPC10

FUNCTIONS

Domain Function Range

- When the relationship between the independent and dependent variable is linear, the slope of the graph shows the rate of change of the dependent variable per one unit of the **in**dependent variable.

- When linear relationships model real life situations, domain and range are often restricted in many different ways.

  Examples:
- Time – time cannot be negative (Ever), it is rarely considered to go to infinity
- h (height) – does not go to negative and positive infinity. Height, however can be negative, then it stands for depth below the reference level.
- g = the number of guitars has to be a whole number
- n = number of people has to be a whole number

Function Notation

Examples:

Input value	$f(x) = 2x + 1$	$f(x) = x$	$h(x) = x^2$	$m(x) = 0.5x\text{-}10$
5				
1				
0				
-2				
0.4				

End Behaviour of Functions and Relations

- **The end behaviour of a function or relation** describes what the graph looks like when the input is close to the beginning or the end of the domain interval.
- **Terms used to describe end behaviour:**

Increasing
Decreasing
Horizontal
Vertical
Approaching a value of
Opens up
Opens down

Examples:

Increasing	Decreasing	Horizontal	Increasing

Approaching a value of 5	Opens up	Opens down	Decreasing

Vertical	Approaching a value of 0	Horizontal	Increasing

Decreasing	Increasing	Approaching a value of 10	Increasing