

Determine the **degree** of each function.

$f(x) = 2x + 3$ 1 $f(x) = 5$ 0

$f(x) = 3x^2 - 2x + 1$ 2 $f(x) = 2x^3 + 3x$ 3

$f(x) = -4x + 1$ 1 $f(x) = \frac{1}{x}$ none

The degree of a function determines the type of function

Degree	Type of function
0	Constant
1	Linear
2	Quadratic

Direct Linear function
Partial Linear function

Unit 4

L6 Types of Functions

- Linear Functions have degree 1

- The rule: $y = ax + b$
or $f(x) = ax + b$

Case 1: if $b = 0 \rightarrow$ Direct Variation Linear function

Case 2: if $b \neq 0 \rightarrow$ Partial Variation Linear function

Case 1: if $b=0$ Direct Variation Linear function

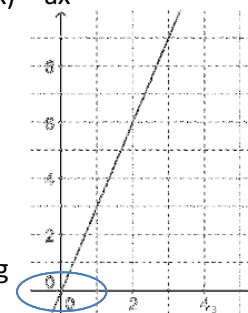
Properties:

- Every y-value is a direct multiple of the x-value
- The rule: $y = ax$ or $f(x) = ax$
- Table of values:

x	y
0	0
1	3
2	6
3	9

Constant
ROC

- Graph: a Diagonal line passing through origin (0,0)



Case 2: if $b \neq 0$ Partial Variation Linear function

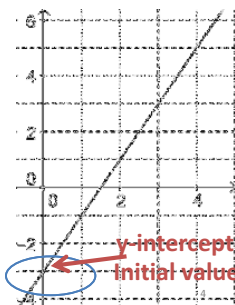
Properties:

- y-values are not direct multiples of the x-values
- The rule: $y = ax + b$ or $f(x) = ax + b$
- Table of values:

x	y
0	-3
1	-1
2	1
3	3

Constant
ROC

- Graph: a Diagonal line passing through y-axis at point (0,b)



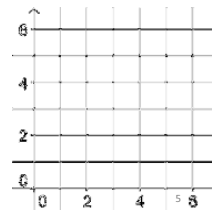
Constant Functions

Properties:

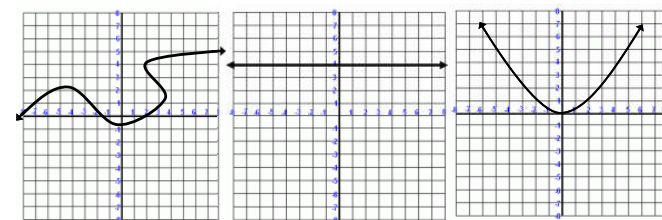
- The ROC = 0 ($\therefore$ aka: zero variation function)
- The rule: $y = b$ or $f(x) = b$
- Table of values:

x	y
0	5
1	5
2	5

- Graph: Horizontal line passing through the y-axis at b.



Ex 1: is it Constant, Direct Linear, Partial Linear or Other



Ex 2: is it Constant, Direct Linear, Partial Linear or Other

x	y
1	3
2	5
3	7
4	9

x	y
10	20
9	18
8	16
7	14

x	y
0	5
20	25
40	45

Ex 3: is it Constant, Direct Linear, Partial Linear or Other

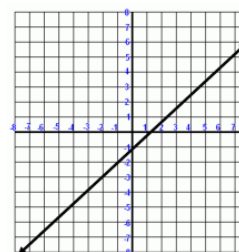
$$y = 4x + 1$$

$$y = x^2$$

$$y = \sqrt{x}$$

$$f(x) = 3x$$

$$f(x) = 5$$



Practice:
4.7 # 1-5

