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Graphs of Related Functions - Lesson 1

Functional Transformations - Translations

LI

- Sketch graphs of functions that are shifted either horizontally or vertically.

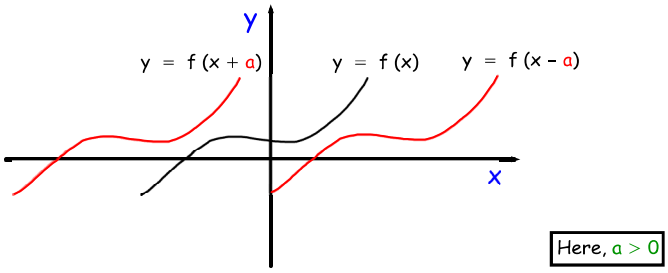
SC

- Sketch graphs of standard functions.

Jan 10-12:11

Translations (aka Shifts)

Horizontal translation (aka x - translation)

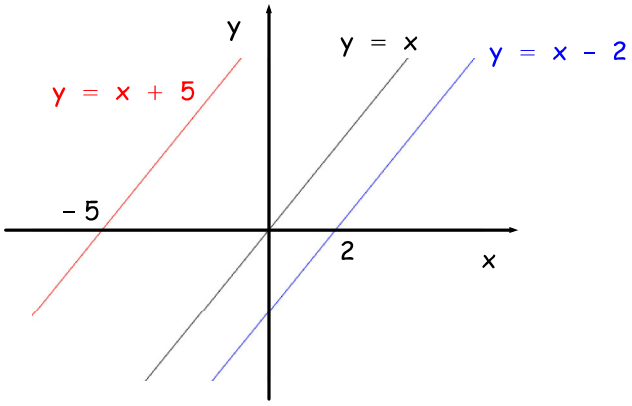


Point (x, y) goes to point (x – a, y).

f (x) changes into f (x – a).

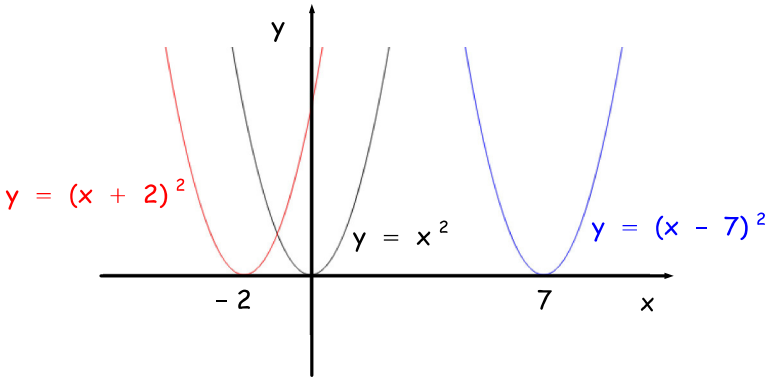
Example 1

Sketch $y = x$, $y = x + 5$ and $y = x - 2$
on the same diagram.



Example 2

Sketch $y = x^2$, $y = (x + 2)^2$ and $y = (x - 7)^2$
on the same diagram.



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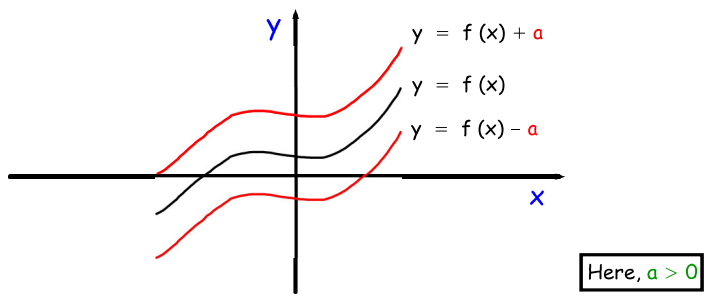
Vertical translation (aka y - translation)

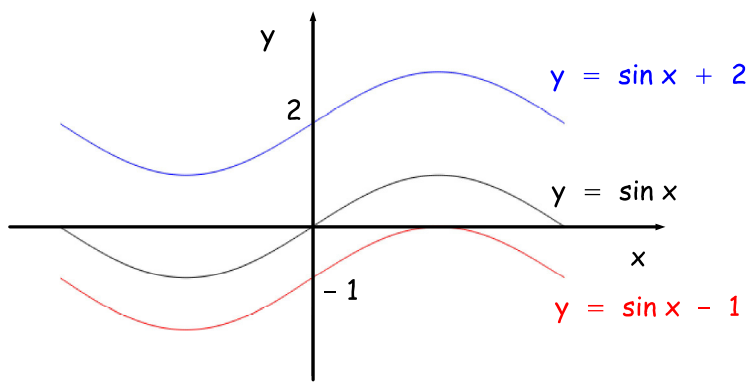


Point (x, y) goes to point (x, y + a).

f (x) changes into f (x) + a.

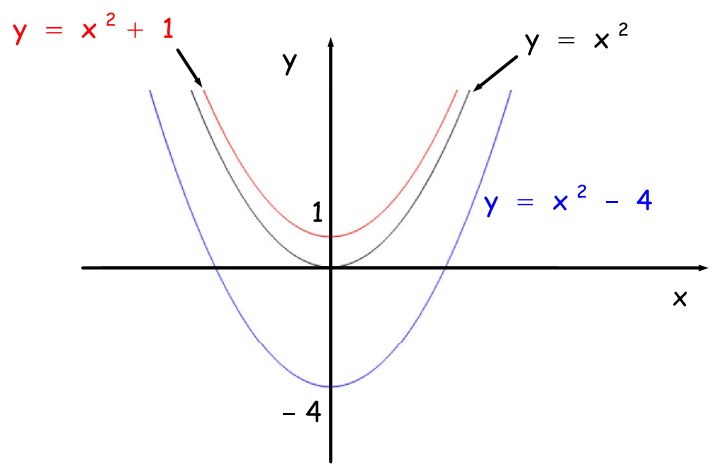
Example 3

Sketch $y = \sin x$, $y = \sin x - 1$ and $y = \sin x + 2$ on the same diagram.



Example 4

Sketch $y = x^2$, $y = x^2 + 1$ and $y = x^2 - 4$ on the same diagram.



Sep 2-09:44

Different Book

Heinemann Higher Maths

y - shifts

pg. 35 Ex. 3B Q 1 - 5

pg. 36 Ex. 3C Q 2 - 4

x - shifts

pg. 37 Ex. 3D Q 1 - 5

pg. 38 Ex. 3E Q 2 - 5

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