

MATH 1314

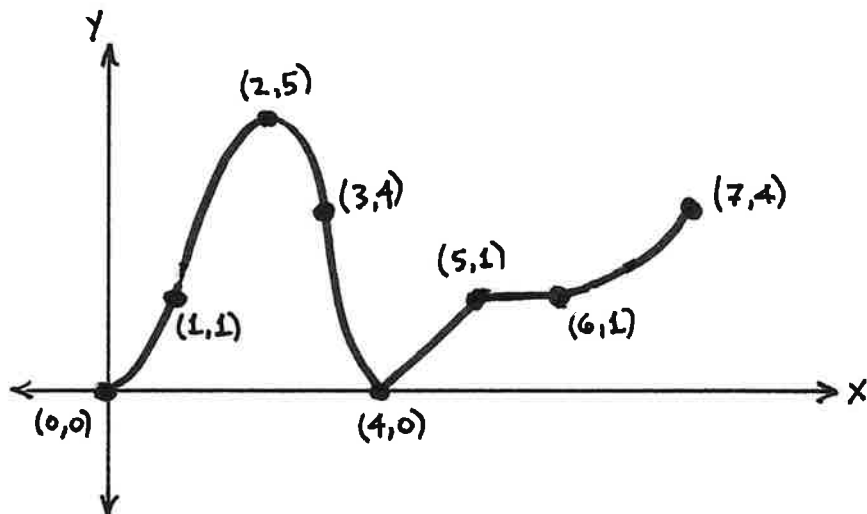
Chapter 1.3: More On Functions And Their Graphs

Increasing?

Decreasing?

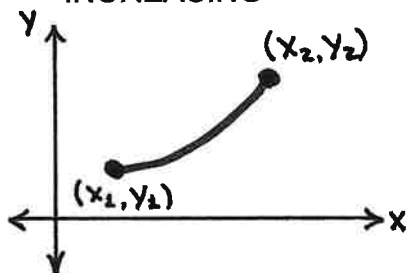
Maximum?

Minimum?

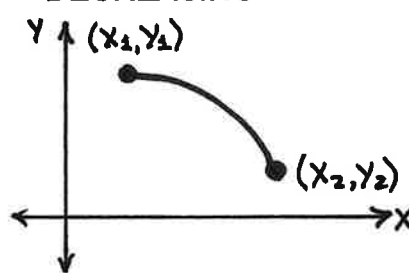


Read the graph from left to right!

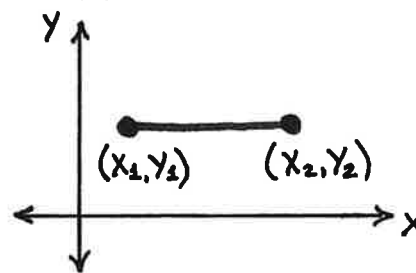
INCREASING



DECREASING



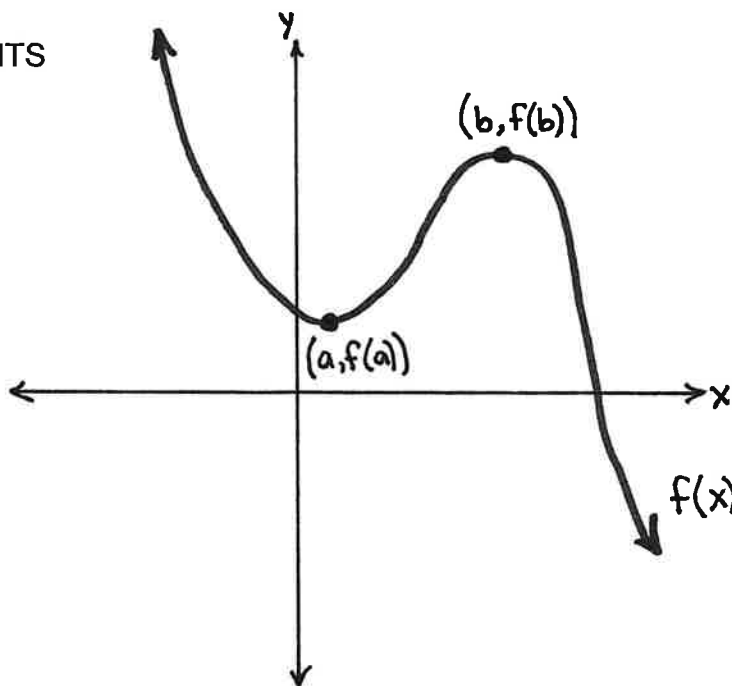
CONSTANT

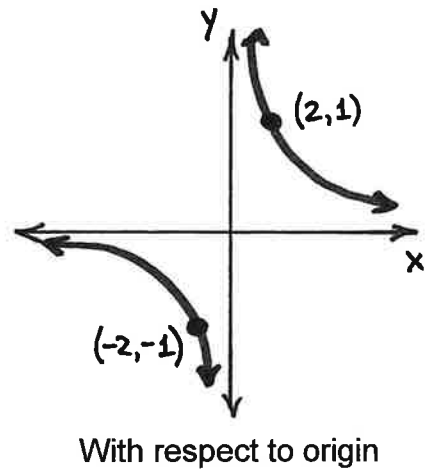
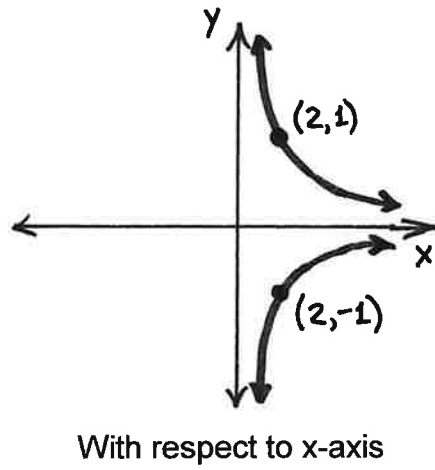
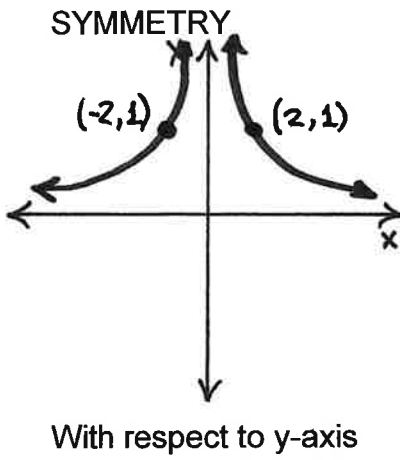


RELATIVE OR LOCAL EXTREME POINTS

Relative or Local Maximum

Relative or Local Minimum





TEST FOR SYMMETRY:

$$x = y^2 - 1$$

$$x = y^2 - 1$$

$$x = y^2 - 1$$

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Chapter 1.3: -3-

TYPE OF SYMMETRY:

EVEN

ODD

NEITHER

$$f(x) = x^3 - 6x$$

$$f(x) = x^4 - 2x^2$$

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

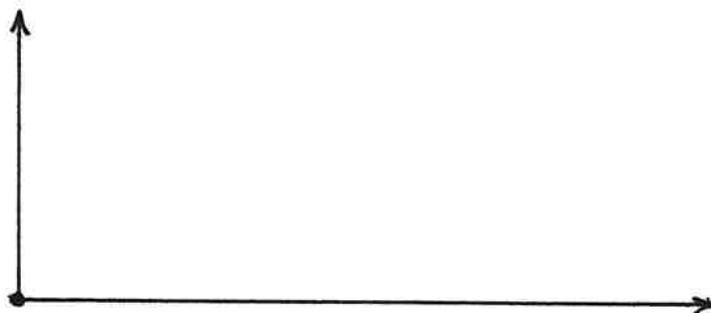
PIECEWISE FUNCTION

Example: A telephone plan charges \$20.00 for the first 60 minutes and \$0.40 for each additional minute. Write a function for the cost of the telephone plan.

Find $c(30)$.

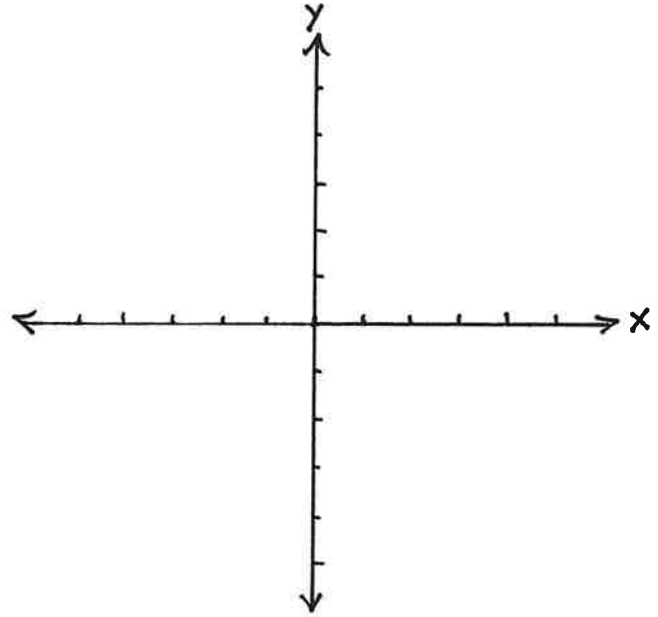
Find $c(100)$.

Graph Sketch ...



Example: Graph the function.

$$f(x) = \begin{cases} x + 2 & \text{IF } x \leq 1 \\ 4 & \text{IF } x > 1 \end{cases}$$



DIFFERENCE QUOTIENT

Ratio

Rate Of Change

Example: Find the difference quotient of $f(x) = 2x^2 - x + 3$.