

# Chapter 2 Section 3

## MA1032 Data, Functions & Graphs

Sidney Butler

Michigan Technological University

September 25, 2006

## Example

A wholesale carpet company sells a certain brand of carpet for \$9 per square yard for the first 100 square yards purchased. The price drops to \$7 per square yard after the first 100 square yards have been purchased. Let  $x$  be the number of square yards of carpet to be purchased. Find a formula in terms of  $x$  for the function that gives the cost of purchasing up to 200 square yards of carpet.

# Piecewise Functions

- Function Machine
- Domain
- Notation

# Step Functions

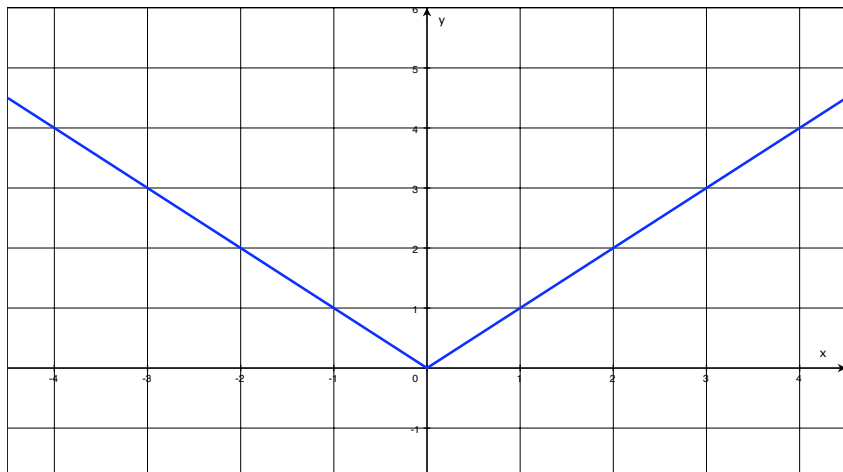
$$f(x) = \begin{cases} 3 & \text{if } x > 2, \\ 5 & \text{if } x \leq 2. \end{cases}$$

## Example

$$g(x) = \begin{cases} 2 & \text{if } x < 1, \\ 4 & \text{if } x > 0. \end{cases}$$

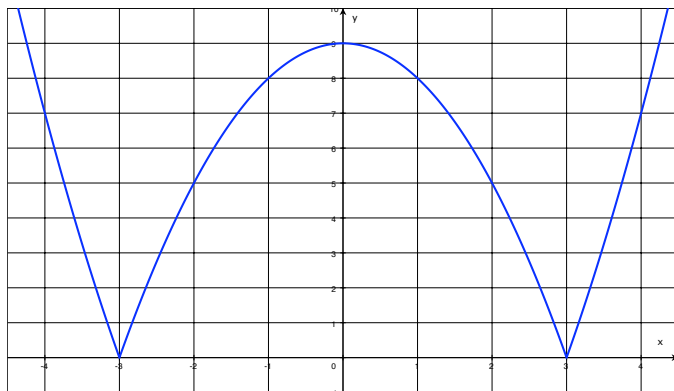
# Absolute Value

$$f(x) = |x|$$



## Example

$$f(x) = |x^2 - 9|$$



# Summary

- Piecewise functions
- Absolute value functions