2.1/2.20 Piecewise Functions

A. Piecewise Functions

Some functions are defined so that there are different formulas depending on the choice of input. These are called <u>piecewise functions</u>.

<u>Example:</u> $f(x) = \begin{cases} x; & x \leq -1 \\ x^2; & x \geq -1 \end{cases}$

To evaluate these types of functions, you just use the appropriate formula.

B. Examples

Let f have output formula given by $f(x) = \begin{cases} x; & x \leq -1 \\ x^2; & x \geq -1 \end{cases}$

<u>Example1:</u> Find $f(-2)$

<u>Solution</u>

Here we use $f(x) = x$; so $f(-2) = \boxed{-2}$

<u>Example2:</u> Find $f(3)$

<u>Solution</u>

Here we use $f(x) = x^2$; so $f(3) = 3^2 = \boxed{9}$

<u>Example3:</u> Find $f(-1)$

<u>Solution</u>

Here we use $f(x) = x^2$, so $f(-1) = (-1)^2 = \boxed{1}$