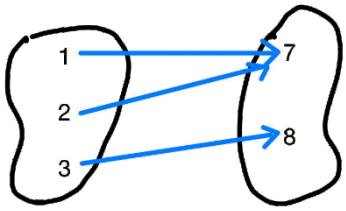
Precalculus

1-04 Functions and Functional Notation

Relation

- Rule that relates _____

Function



- Special _____
- A function f from set A to set B is a relation that assigns each element x in set A to _____one element in set B
- Set A: _____, _____
- Set B: _____, _____

Is this a function?

x	−2	−1	0	1	2
y	−8	−1	0	1	8

$x^2 + y = 4$ $x + y^2 = 16$

Functional Notation

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

_____ _____ _____

If $f(y) = 3 - \sqrt{y}$, evaluate

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

Piecewise functions

- Function made of _____function with specific _____

$$f(x) = \begin{cases} 2x + 1, & x < 0 \\ 2x + 2, & x \geq 0 \end{cases}$$

Evaluate $f(-1)$ $f(2)$

Domain of a function

- Implied domain - all real numbers for which the expression is _____

Interval notation

- [ ] means _____
- ( ) means _____
- (2, 7] means _____

What is the domain?

$h(t) = \frac{4}{t}$ $f(x) = \sqrt{5x - 8}$

Difference Quotient

$$\frac{f(x+h) - f(x)}{h}$$

Simplify the difference quotient for $f(x) = 2x + 1$