October 20, 2017

9:00 am   66

10:00 am   75

Oct 20-8:52 AM

5.1

#11) $R = \{ (-6,-4), (-4,-4), (1,-4) \}$

Domain   Range

-6
-4 $\rightarrow$ -4
1

Is a function

$y = -4$
$m = 0$
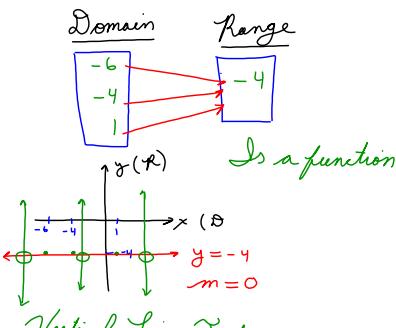
Vertical Line Test: if a vertical line through a graph only intersects once, then it is a function.

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Def. Function: A relation is a function if and only if each object in the domain is paired with exactly one object in the Range.
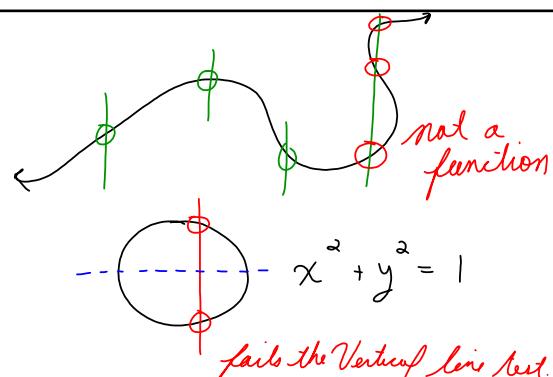
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D

5 $\rightarrow$ -6
      $\rightarrow$ 4
      $\rightarrow$ -2

Not a function R

$\{ (5,-6), (5,4), (5,-2) \}$

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$\{ (3,3), (-4,8), (2,3) \}$

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not a function

$x^2 + y^2 = 1$

fails the Vertical line test.

Oct 20-9:23 AM

1

#45) Given $f(x) = -2x^2 + 5x - 9$
and $g(x) = -2x^2 + 3x - 4$,
evaluate $f(-2)$ and $g(-2)$.

(a.) $f(-2) = \underbrace{-2(-2)^2 + 5(-2) - 9}$
       ↑ Input   Rule

$= -2(4) - 10 - 9$
$= -8 - 10 - 9$
$= -18 - 9$
$= \boxed{-27}$
     ↑ Output

(b.) $g(-2) = -2(-2)^2 + 3(-2) - 4$
$= -2(4) - 6 - 4$
$= -8 - 6 - 4$
$= -14 - 4$
$= \boxed{-18}$ ← Output

Oct 20-9:26 AM

5.2 Polynomials

* Def: Term — is a number,
5, y^3, $5y^3$,   a variable, a
$2x^2$,   product of a number
       and a variable.

① Monomial — a single
"one"   term.
     5, $5y$, $2x^2$

② Binomial — two terms
"two"   connected by
      addition
$x + 3$, $2y^2 - 4$ or $2y^2 + (-4)$
$6 - x$

③ Trinomial — three terms
"three"   connected by
       addition
$x^2 - x - 12$, $4x + y - 5$

④ Polynomial — more than
"many"   three terms
        connected by
        addition.
$-5x^4 + 2x^3 - 4x^3 + 2x^2 - x + 8$

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The Degree of a term
and the Degree of a
Polynomial.

Degree of a term: $4x^2y^1$

Degree is the sum of
the exponents of
the variables
      Degree 2 term

Oct 20-9:45 AM