

August 25, 2017
Add/Drop!

Aug 25-8:06 AM

#22) $f(x) = \frac{1-4x}{x^2-2x-15} \neq 0$
 What is the domain of all real numbers? $\neq 0$
 ways to solve $x^2 - 2x - 15 \neq 0$ $\neq 0$ $\neq -3$
 ① factor $(x-5)(x+3) \neq 0$
 ② Complete the square
 $F: x^2$
 $O: -2x$
 $I: -5x$
 $L: -15$
 ③ Quadratic Formula
 $x - 5 \neq 0$
 $x \neq 5$
 $x + 3 \neq 0$
 $x \neq -3$
 $(5)^2 - 2(5) - 15 = 25 - 10 - 15 = 0$
 $15 - 15 = 0$
 $(-3)^2 - 2(-3) - 15 = 9 + 6 - 15 = 0$
 $15 - 15 = 0$
 Domain:
 Interval Notation $(-\infty, -3) \cup (-3, 5) \cup (5, \infty)$
 Set-Builder Notation $\{x \mid x \in \mathbb{R} \wedge x \neq 5 \wedge x \neq -3\}$
 each element of real numbers

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Function Machine

Input f output
 * set of x 's that are valid to f * set of y 's
 * Horizontal Coordinate * Vertical Coord.
 * Independent variable * Dependent Variable
 * Domain * Range

Some Rule $2x+3$

$(0, 3)$
 $(2, 7)$
 $(-3, -3)$

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$f(x) = \frac{x}{4} \quad D: (-\infty, \infty)$
 $f(x) = \frac{2}{x-2} \quad D: (-\infty, 2) \cup (2, \infty)$

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#19) $3x^2 + 15x + 18 = 0$
 $a=3, b=15, c=18$
 $ac \neq b^2$
 $3(18) = 54$
 $3x(x+3) + 6(x+3) = 0$ $b=15$
 $(x+3)(3x+6) = 0$
 ① $x+3=0$
 $x = -3$
 ② $3x+6=0$
 $3x = -6$
 $x = -2$

Aug 25-8:47 AM