July 6, 2015

Exam #1

$\frac{72}{72} = 100$

-4 5)

-2 6)

1 7)

$72 - 10 = 62$

$\frac{62}{72} = 0.8611111\ldots$

$= 87$

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#14) $\frac{\sqrt{-60}}{\sqrt{-10}} = \frac{i\sqrt{60}}{i\sqrt{10}}$

$= \frac{\sqrt{60}}{\sqrt{10}} = \sqrt{\frac{60}{10}}$

$= \sqrt{6}$

$\sqrt{6} + 0i$

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#9) $x = \sqrt{3x+1} + 3$

$-3 \quad -3$

$(x-3)^2 = (\sqrt{3x+1})^2$

$(x-3)(x-3) = 3x+1$

$x^2 - 6x + 9 = 3x + 1$

$x^2 - 9x + 8 = 0$

$(x-8)(x-1) = 0$

① $x = 8$ ② ~~$x = 1$~~ } Solutions to $x^2 - 9x + 8 = 0$

$x = 8$

$8 = \sqrt{3(8)+1} + 3$

$= \sqrt{24+1} + 3$

$= \sqrt{25} + 3$

$= 5 + 3$

$8 = 8$ ✓

$x = 1$

$1 = \sqrt{3(1)+1} + 3$

$= \sqrt{3+1} + 3$

$= \sqrt{4} + 3$

$= 2 + 3$

$1 \neq 5$

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#16) $i^2 = -1$

$(6-9i)^2 = (6-9i)(6-9i)$

$= 36 - 54i - 54i + 81i^2$

$= 36 - 108i + 81(-1)$

$= 36 - 108i - 81$

$= -45 - 108i$

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#18) $i^{44} = (i^4)^{11} = (1)^{11}$

$= 1$

$i^4 = 1$

$1 + 0i$

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#4) $4r^3 - 108$

$4(r^3 - 27)$ $a = r$, $b = 3$

$4(r-3)(r^2 + 3r + 9)$

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#5) $\left(\frac{x y^5}{x^4 y}\right)^{-2} = \frac{x^{-2}\cdot (y^5)^{-2}}{(x^4)^{-2}\cdot y^{-2}}$

Everything is the Base

$= \frac{x^{-2}\cdot y^{-10}}{x^{-8}\cdot y^{-2}}$

$= \frac{x^8 \cdot y^2}{x^2 \cdot y^{10}}$

$= \boxed{\frac{x^6}{y^8}}$

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Forms of Linear Equations

① $y = mx + b$ (y-int: $(0, b)$)
Slope - Intercept Form

② $Ax + By = C$
Standard Form
A, B, C are Integers

③ $y - y_1 = m(x - x_1)$ *not rational!
Point - Slope Form
(x_1, y_1)

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Slope $= \frac{y_2 - y_1}{x_2 - x_1}$

$\frac{x - x_1}{1} \cdot \frac{y - y_1}{x - x_1} = m \cdot x - x_1$

$y - y_1 = m(x - x_1)$
Point - Slope

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Use Point - Slope & put into Standard form

$(\underset{x_1}{-5}, \underset{y_1}{11})$; $m = -\frac{3}{4}$

$y - y_1 = m(x - x_1)$

$y - (11) = (-\frac{3}{4})(x - (-5))$

$\frac{4}{1}\left[y - 11 = (-\frac{3}{4})(x + 5)\right]$

$4y - 44 = -3(x + 5)$

$4y - 44 = -3x - 15$

$+44 \quad +44$

$+3x \quad +3x$

$\boxed{3x + 4y = 29}$

$3(-5) + 4(11) = 29$

$-15 + 44$

$29 = 29$ ✓

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$(-6, -7)$; $m = \frac{11}{5}$

$y - (-7) = \left(\frac{11}{5}\right)(x - (-6))$

$5\left[y + 7 = \left(\frac{11}{5}\right)(x + 6)\right]$

$5y + 35 = 11(x + 6)$

$5y + 35 = 11x + 66$

$(-1)\left[-11x + 5y = 31\right]$

$\boxed{11x - 5y = -31}$

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Do 9.1 multiples of 3

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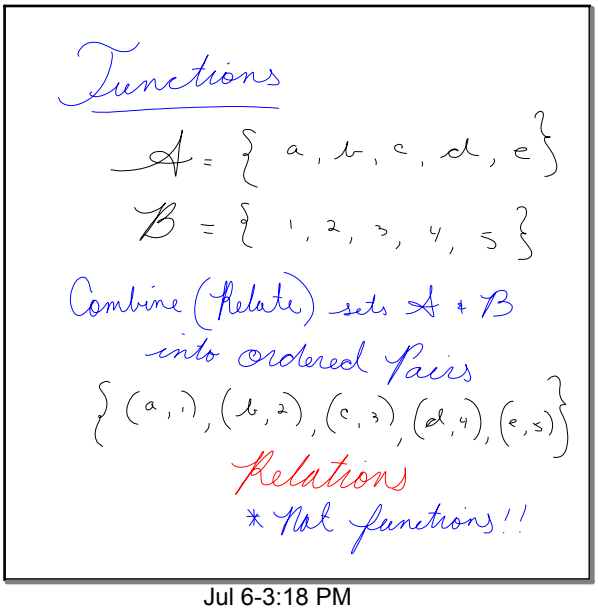

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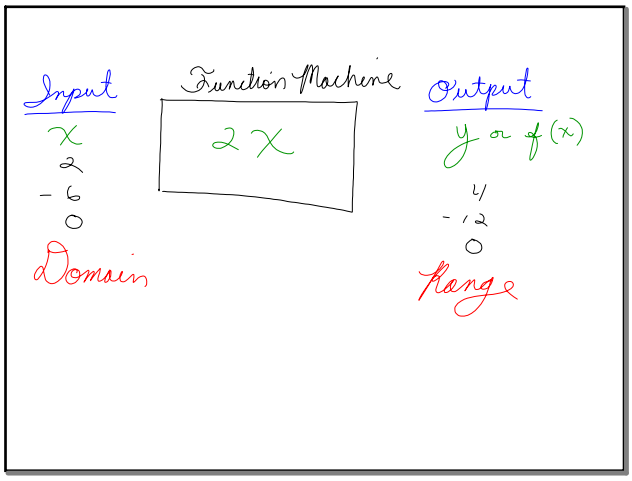

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