FRIDAY - Week 2

More Algebraic Equations & Expressions

① $x(x-3) = 54$

~~$x = 54$~~
~~$x - 3 = 54$~~

Quadratic — Type —

$x(x-3) - 54 = 0$

$x^2 - 3x - 54 = 0$

$(x+6)(x-9) = 0$

OR

$x^2 - 9x + 6x - 54 = 0$

$x(x-9) + 6(x-9) = 0$

$(x-9)(x+6) = 0$

$x = -6$

$x = 9$

② start $\frac{1}{x-1} - \frac{x}{x+1} - 2 = 0$

$-x^2 + x$ $\quad -2x^2 + 2$

$x(x-1)$ $\quad -2(x^2-1)$

$-2(x-1)(x+1)$

$\frac{x+1}{x+1}\left(\frac{1}{x-1}\right) - \left(\frac{x}{x+1}\right)\frac{x-1}{x-1} - 2\frac{(x-1)(x+1)}{(x-1)(x+1)} = 0$

(A) Common denom: product of all these denom

$(x-1)(x+1)$

goal: get ↑

(B) $\frac{x+1 - x^2 + x - 2x^2 + 2}{(x+1)(x-1)} = 0$

$\frac{-3x^2 + 2x + 3}{(x+1)(x-1)} = 0$

(C) cross mult.

$-3x^2 + 2x + 3 = 0 \cdot (x+1)(x-1)$

$= 0$

$A = -3 \quad C = 3$

$AC = -9$

NOT POSSIBLE TO FACTOR

$x = \frac{-2 \pm \sqrt{4 - 4 \cdot (-3)(3)}}{2 \cdot (-3)}$

$= \frac{-2 \pm \sqrt{40}}{-6}$

FRACTIONS & ZERO

$\frac{0}{1} = 0, \frac{0}{6} = 0, \frac{0}{2} = 0$

③ $\left(\frac{x^3 y^5 z^3 x^{-3}}{x^5 y^2 z^2 y^2}\right)^{-4} = x^r \cdot y^s \cdot z^t$

Simplify!

$r = ?$

$s = ?$

$t = ?$

Ⓐ $\left(x^{-5} y z\right)^{-4}$

inside first

Ⓑ $(x^{-5})^{-4}\, y^{-4}\, z^{-4}$

$x^{20}\, y^{-4}\, z^{-4}$

exponents play nice w/ * ÷

Building a polynomial up from its roots

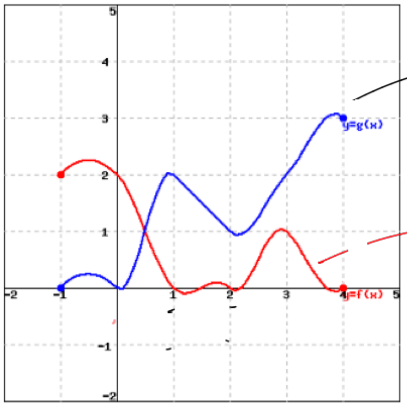
Enter a quadratic polynomial which has roots at 13/16 and -8.

$$\left(x - \frac{13}{16}\right)(x - (-8))$$

$$\left(x - \frac{13}{16}\right)(x + 8) = x^2 + 8x - \frac{13}{16}x - 8\left(\frac{13}{16}\right)$$

$$= x^2 + \left(8 - \frac{13}{16}\right)x - \frac{13}{2}$$

Problem 19. **(1 point)** Library/CollegeOfIdaho/setAlgebra_03_02_ProblemSolvingBusinessApp/32IntAlg_15_Functions_Review.pg



$g(x)$

$f(x)$

$g \circ f(4) = g(f(4)) = g(0) = 0$

$f \circ g(4) = f(g(4)) = 1$

$f(g(f(4))) = ?$

The graph of f is shown in red, and the graph of g is shown in blue. Use the graphs to evaluate each quantity given below.
NOTE: If only a blue section of graph shows up, that means the red graph is behind it.
NOTE: Round your values to the closest integer.

a) $f(4) =$ 0

"f of 4" = height of graph of f(x) above x = 4

b) $g(4) =$ 3

c) $f(4)+g(4) =$ 3

Answer(s) submitted:

$$\frac{t^{3y} \cdot t^{16}}{t^{5}}$$

$t^{3y} \cdot t^{16} = t^{3y+16}$