

# Mini-Quiz 10 Solutions

## Math 111

Name:

[10] Solve for  $y$ . Combine like terms where given but you need not perform fraction addition. Let  $x$  and  $y$  be real numbers. Assume no combinations of numbers on this sheet = 0

$$\frac{1}{x} = \frac{1}{y}$$

$$x = \frac{3-y}{2y}$$

$$x = \frac{3y}{y+4x}$$

$$x = \frac{2-3y}{-y+5}$$

$$y = x$$

$$y = \frac{3}{2x+1}$$

$$y = \frac{4x^2}{3-x}$$

$$y = \frac{2-5x}{3-x}$$

Solve for  $g(x)$ . Combine like terms where given but you need not perform fraction addition. Let  $x$ ,  $z$ , and  $g(x)$  be real numbers. Assume  $x, y, z \neq 0$

$$x = \frac{-3+g(x)}{g(x)}$$

$$x = \frac{g(x)}{2g(x)-1}$$

$$-x = \frac{2-3g(x)}{-g(x)+5}$$

$$\frac{1}{g(x)} = \frac{1}{xz} + \frac{1}{z}$$

$$g(x) = \frac{-3}{x-1}$$

$$g(x) = \frac{-x}{1-2x}$$

$$g(x) = \frac{2+5x}{x+3}$$

$$g(x) = \frac{xz}{1+x}$$

$$-2g(x) = \frac{-2g(x)-12}{g(x)}$$

$$2g(x) = \frac{3g(x)-x}{g(x)}$$

$$0 = 2g(x)^2 - 2g(x) - 12$$

$$0 = g(x)^2 - g(x) - 6$$

$$0 = (g(x) - 3)(g(x) + 2)$$

$$g(x) = 3, -2$$

$$0 = 2g(x)^2 - 3g(x) + x$$

$$g(x) = \frac{3 \pm \sqrt{9-8x}}{4}$$