

$$g(x) = 3x + 4$$

$$f(x) = x^2 + 2x - 3$$

$$f(3) = 9 + 6 - 3 = 12$$

$$(f+g)(2) = 4 + 4 - 3 + 6 + 4 = 15$$

$$g^{-1}(x) \quad y = 3x + 4$$

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

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

$$\frac{x-4}{3} = g^{-1}(x)$$

$$f(x) = x^2 + 2x - 3$$

$$g(x) = 3x + 4$$

$$\left(\frac{f}{g}\right)(0) = \frac{-3}{4}$$

$$\left(\frac{\cancel{3x+4}}{3x+4}\right)^2 + \underline{2(3x+4)} - 3$$

$$(3x+4)(3x+4)$$

$$9x^2 + 24x + 16 + 6x + 8 - 3$$

$$9x^2 + 30x + 21$$

$$g(x) = 3x + 4$$

$$0 = 3x + 4$$

$$-4 = 3x$$

$$-\frac{4}{3} = x$$

$$\left(-\frac{4}{3}, 0\right)$$

$$(0,0)(5,12)$$

$$\sqrt{(12-0)^2 + (5-0)^2}$$

$$\sqrt{144+25} = \sqrt{169} = 13$$

$$\left(\frac{12}{5}\right) = \cancel{\frac{2}{5}}$$

$$\left(\frac{5}{2}, 6\right) \quad \frac{12}{2} = y \quad \frac{5}{2} = x$$

$$(1, -6) - (-3, -4)$$

$$\sqrt{(-4 + 6)^2 + (-3 - 1)^2} = \frac{2\sqrt{20}}{2} = \frac{2\sqrt{5}}{1}$$

$$\sqrt{2^2 + -4^2} = \sqrt{4 + 16} = \sqrt{20}$$

$$\frac{-4 - -6}{-3 - 1} = \frac{2}{-4} = -\frac{1}{2}$$

$$\frac{-4 + -6}{2} = \frac{-10}{2} = -5$$

$$(-1, -5)$$

$$(3, 4) \quad \underline{(4, 6)}$$

$$\frac{2}{1}$$
$$y - 6 = 2(x - 4)$$
$$y - 6 = 2x - 8$$

$$\curvearrowleft y = 2x - 2$$

$$-2x + y = -2$$

$$2x - y = 2$$

$$2x - y - 2 = 0$$

$$5x - 8y = 4$$

$$-\frac{A}{B}$$

$$-\frac{5}{-8} = \frac{5}{8}$$

$$y = x - 9$$

slope is 1

$$y - (-9) = -1(x - 0)$$
$$y + 9 = -x$$
$$x + y + 9 = 0$$
$$x + y = -9$$

$$f(x) = x^2 - 12$$

$$f^{-1}(x) = \pm \sqrt{x+12}$$

$$x+12-12 = x$$

$$\sqrt{x^2-12+12} = \sqrt{x^2} = x$$

$$f(x) = 3x^3 - 2$$

$$f^{-1}(x) = \sqrt[3]{\frac{x-2}{3}}$$

$$\cancel{3} \left( \frac{x-2}{\cancel{3}} \right) - 2$$

$$x - 2 - 2 = x - 4$$

$$\begin{aligned} y + 4x - 2 &= 0 \\ 4x + y - 2 &= 0 \\ y + 4x + 1 &= 0 \\ 4x + y + 1 &= 0 \end{aligned}$$

$-\frac{4}{1}$        $-\frac{4}{1}$

$$y = 8x - 1 \text{ slope} = 8$$

$$7x - y - 1 = 0$$

$$\frac{-7}{-1} = \frac{7}{1}$$