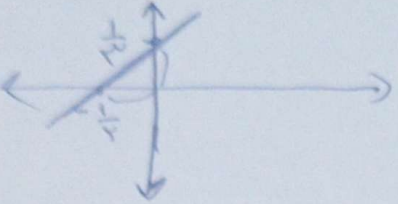


$$2y = 3x - 1 \Rightarrow 2y + 1 = 3x \Rightarrow \frac{2y+1}{3} = x \Rightarrow \frac{2}{3}x + \frac{1}{3} = y$$

$$\frac{2}{3}x + \frac{1}{3} = 0 \Rightarrow \frac{2}{3}x = -\frac{1}{3} \Rightarrow x = -\frac{1}{2}$$


$$\frac{\frac{1}{3} \times \frac{1}{2}}{2} = \left(\frac{\frac{1}{6}}{2} \right) = \boxed{\frac{1}{12}}$$

$$y = x^2 - 2x + 3 \Rightarrow x^2 - 2x + \frac{1}{4} = \frac{1}{4} + 2$$

$$\frac{-b}{2a} = \frac{-(-2)}{2(1)} = \frac{2}{2} = 1 \quad (x-1)^2 + 2$$

$$y = (x-1)^2 + 2 \Rightarrow y - 2 = (x-1)^2$$

$$\sqrt{y-2} = x-1 \Rightarrow \sqrt{y-2} + 1 = x \Rightarrow \sqrt{x-2} + 1 = y \quad [2, +\infty)$$

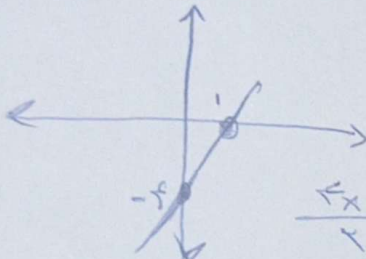
$$y = x^2 - 2x + 3 \Rightarrow x^2 - 2x + \frac{1}{4} = \frac{1}{4} + 2$$

$$(x-1)^2 + 2 = y$$

$$y = (x-1)^2 + 2 \Rightarrow y - 2 = (x-1)^2$$

$$\sqrt{y-2} = x-1 \Rightarrow \sqrt{y-2} + 1 = x$$

$$\sqrt{x-2} + 1 \Rightarrow [2, +\infty)$$



$$\frac{1 \times 1}{5} = \boxed{\frac{1}{5}}$$

$$2x - \sqrt{4 - 5x} = 2x - \sqrt{16x + 4 + 5x}$$

$$2x - \sqrt{6x^2 - 14x + 4} = 2x - \sqrt{4(x^2 - 5x + 1)}$$

$$2x - 2\sqrt{x^2 - 5x + 1} = 2x - 2\sqrt{(x-1)^2}$$

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

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

$$y = \frac{x}{\sqrt{x^2 - 5}} \Rightarrow y^2 = \frac{x^2}{x^2 - 5} \Rightarrow y^2 x^2 - 5y^2 = x^2 \Rightarrow y^2 x^2 - x^2 = 5y^2$$

$$x^2(y^2 - 1) = 5y^2$$

$$x^2 = \frac{5y^2}{y^2 - 1} \Rightarrow x = \sqrt{\frac{5y^2}{y^2 - 1}} \Rightarrow y = \frac{\sqrt{5}x}{\sqrt{x^2 - 1}}$$

$$g(x) = \begin{cases} x^2 - 5x + k & x \geq 2 \\ -x^2 + 4x + 3k & x < 2 \end{cases} \Rightarrow (2)^2 - 5(2) + k = -(-5 + 12 + 3k)$$

$$-4 + k = -5 + 12 + 3k \Rightarrow -2k = 12$$

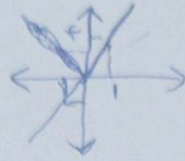
$$k = -6$$

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$$g(x) = ax + b|x|$$

$$f(x) = rx + |x|$$

$$y = rx + |x| \Rightarrow$$



$$rx = y \Rightarrow \frac{x}{r} = y$$

$$rx = y \Rightarrow \frac{x}{r} = y$$

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6

$$\frac{r(r) + \epsilon}{r + m} = -10 \Rightarrow \frac{10}{r + m} = -10 \Rightarrow -r_0 - 10m = 10$$

$$f(x) = \frac{rx + \epsilon}{x + m}$$

$$y = \frac{rx + \epsilon}{x - r}$$

$$\Rightarrow yx - ry = rx + \epsilon \Rightarrow yx - rx = ry + \epsilon \Rightarrow x(y - r) = y + \frac{\epsilon}{r}$$

$$\frac{y + \epsilon}{y - r} = x \Rightarrow \frac{x + \epsilon}{x - r} = y$$

$$-10m = 10 + r_0 \Rightarrow -10m = r_0 \Rightarrow m = -r$$

$$f(r - rx) = r - g\left(\frac{x}{r}\right)$$

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$$y = \frac{\omega x - 11^u}{1 - x} \Rightarrow -\left(\frac{\omega(-x) - 11^u}{1 - (-x)}\right) = -\left(\frac{-\omega x - 11^u}{1 + x}\right) = \frac{\omega x + 11^u}{1 + x} \Rightarrow \frac{\omega(x - r) + 11^u}{1 + (x - r)}$$

$$\frac{\omega x - 10 + 11^u}{1 + x - r} = \frac{\omega x + r}{x - 1} = f(x)$$

$$f^{-1}(x) = \frac{x + r}{x - \omega} = y$$

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$$f(x) = x + f[x]$$

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