

3c)

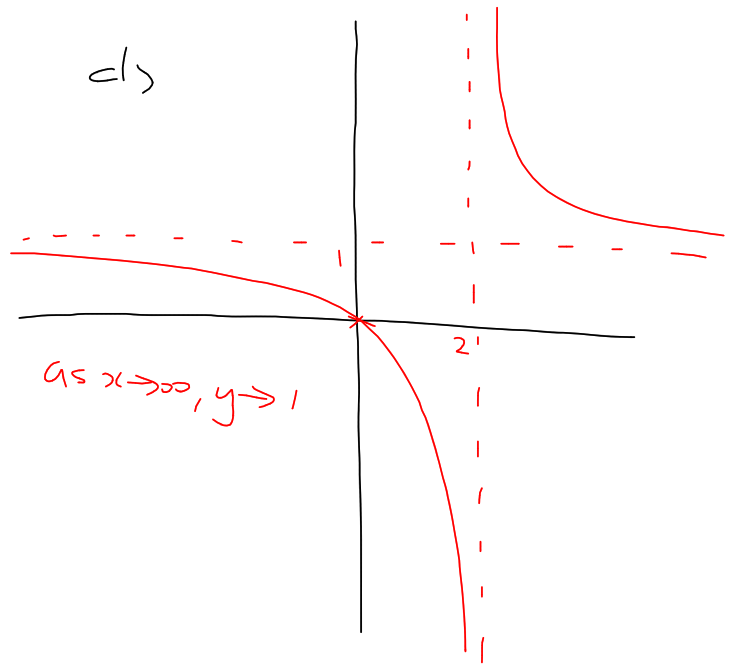
$$y = \frac{x}{x-2}$$

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

$$\frac{2}{x-2} \neq 0$$

$$\therefore \underline{\underline{y \neq 1}}$$

d)



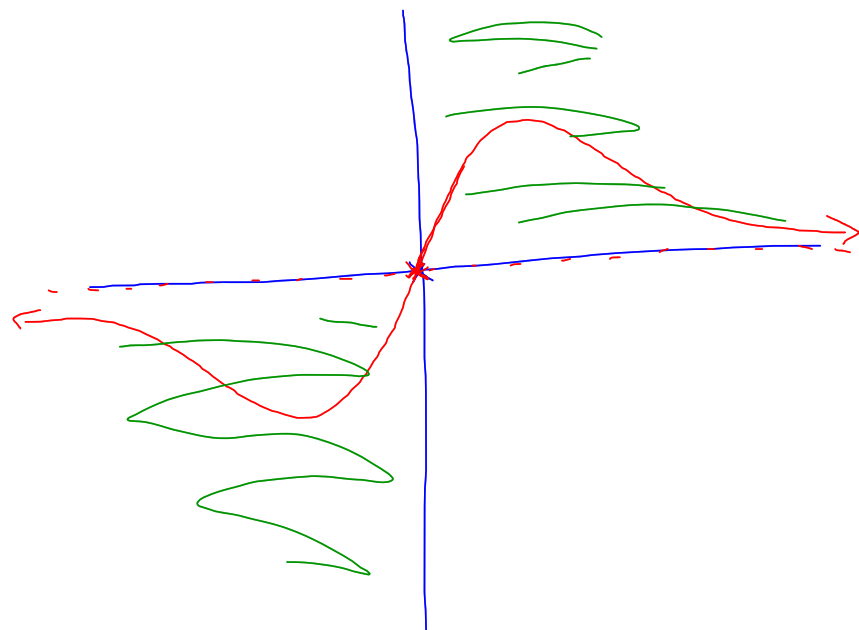
$$6/ \quad y = \frac{3x}{x^2 + 9}$$

$$f(-x) = \frac{3(-x)}{(-x)^2 + 9}$$

$$= \frac{-3x}{x^2 + 9}$$

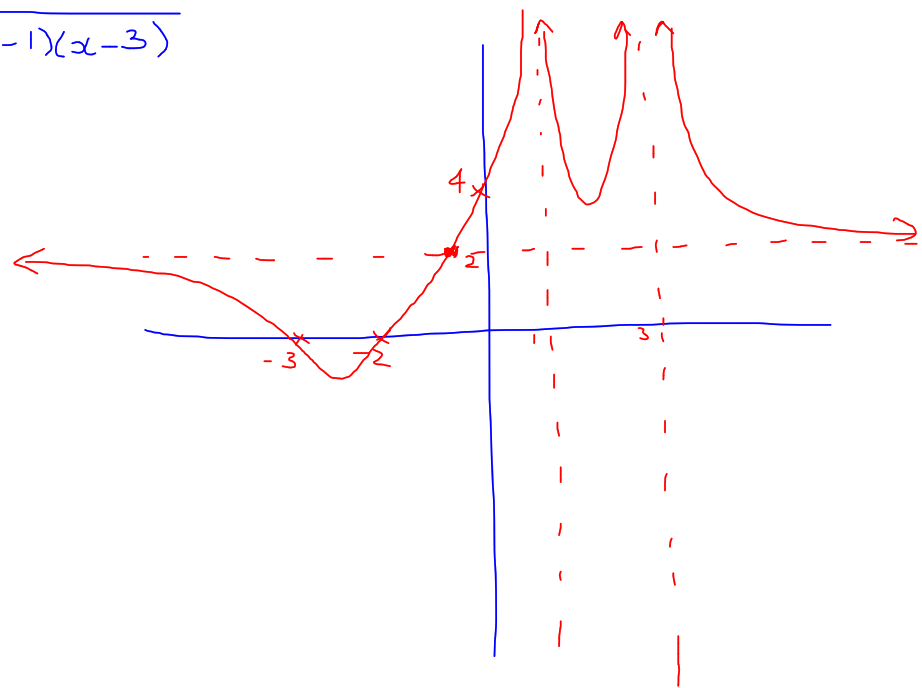
$$= -f(x)$$

$\therefore$  odd



8a)

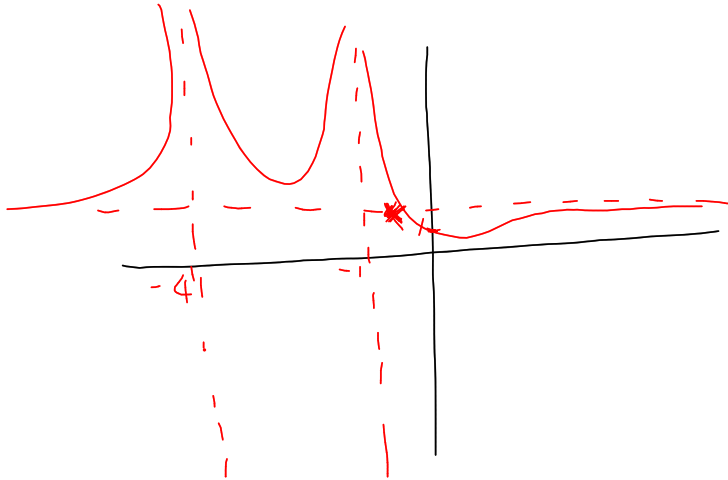
$$y = \frac{2(x+2)(x+3)}{(x-1)(x-3)}$$



$$8c) \quad y = \frac{x^2 + 2x + 2}{x^2 + 5x + 4}$$

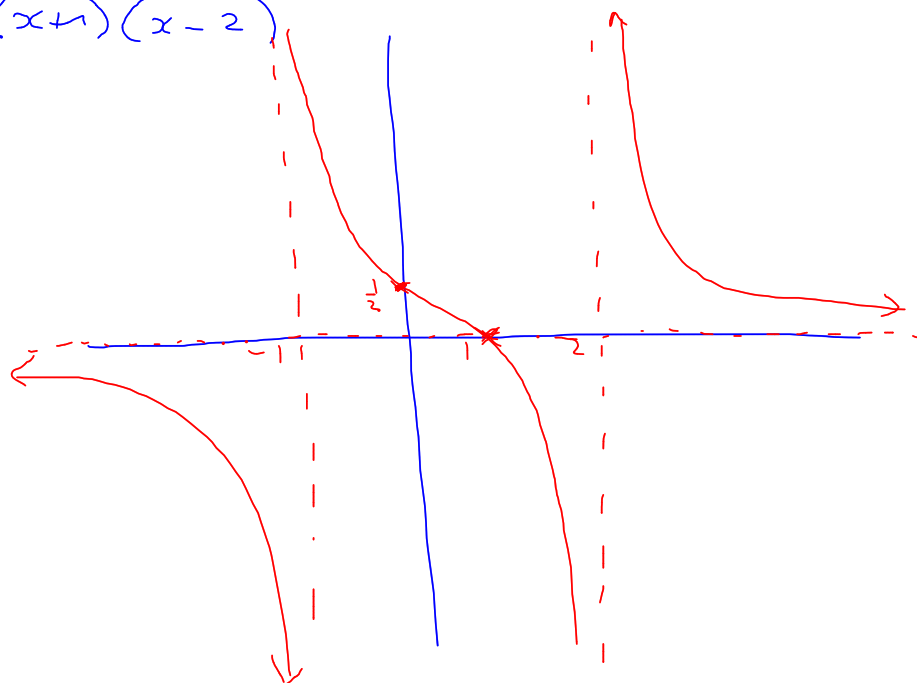
$$= 1 - \frac{3x + 2}{(x + 4)(x + 1)}$$

$$\begin{array}{r} 1 \\ \hline x^2 + 5x + 4 \overline{) x^2 + 2x + 2} \\ \underline{x^2 + 5x + 4} \\ -3x - 2 \end{array}$$

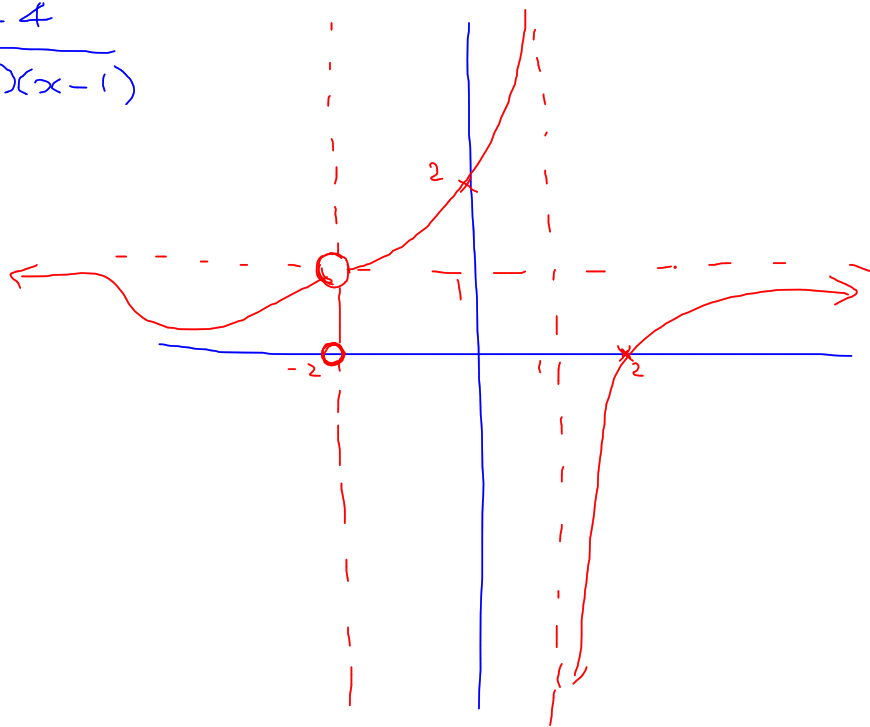


16c)

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

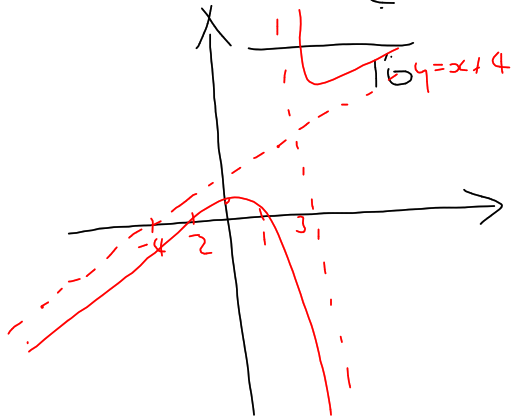


16e)  $y = \frac{x^2 - 4}{(x+2)(x-1)}$



$$\frac{(x-1)(x+2)}{x-3} = x+4 + \frac{10}{x-3}$$

$$\begin{array}{r} x+4 \\ x-3 \overline{) x^2+x-2} \\ \underline{x^2-3x} \phantom{-2} \\ 4x-2 \\ \underline{4x-12} \\ \phantom{4x-}10 \end{array}$$



OR

$$\begin{aligned} & x+4 + \frac{10}{x-3} \\ &= \frac{(x+4)(x-3)+10}{(x-3)} \\ &= \frac{x^2+x-12+10}{(x-3)} \\ &= \frac{x^2+x-2}{x-3} \end{aligned}$$

$$y = \frac{x+7}{x^2-3}$$
$$= \frac{x+7}{(x+\sqrt{3})(x-\sqrt{3})}$$

