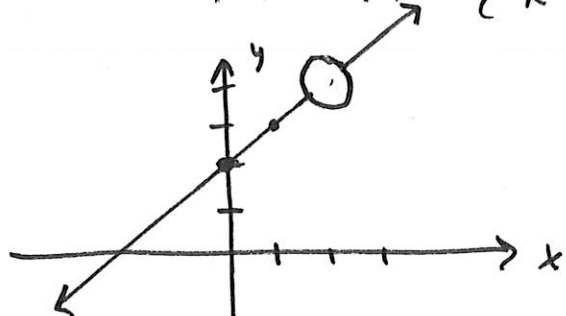


**Ex 9** Graph  $f(x) = \frac{x^2 - 4}{x - 2}$

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

Domain  $\{x \mid x \neq 2\}$   $(-\infty, 2) \cup (2, \infty)$



**Ex 10**

Applications

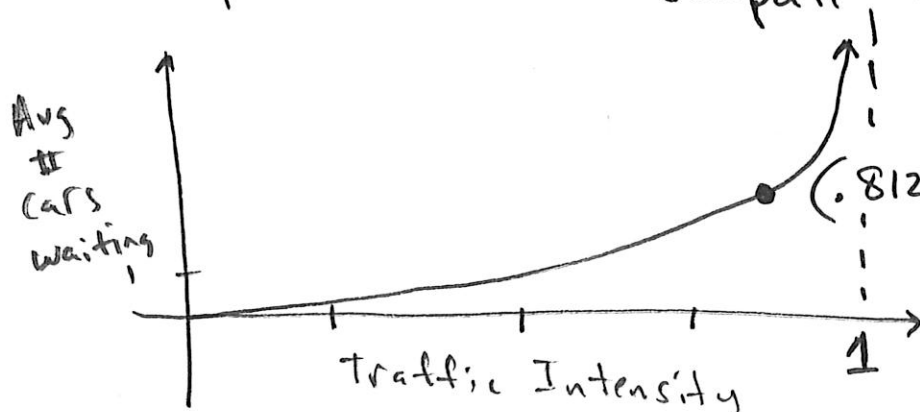
(a) Determine traffic intensity.  $= \frac{\text{AVG ARRIVAL}}{\text{AVG ADMIT.}}$

Avg rate car arrival is 2.6 cars/min

Avg admittance rate is 3.2 cars/min

$$\lambda = \frac{2.6}{3.2} = 0.8125$$

(b) Avg # cars waiting in line  $f(x) = \frac{x^2}{2(1-x)}$   
Graph  $f(x)$  and compute  $f(0.8125)$



$$f(0.8125) = \frac{(0.8125)^2}{2(1-0.8125)}$$

$$\approx \boxed{1.76 \text{ cars}}$$

3.5 (1) What happens to the number of vehicles waiting as the traffic intensity approaches 1? Day 5 (2)

From the graph, as  $x$  approaches 1,  $y = f(x)$  gets very large. Thus the average number of waiting vehicles gets very large.