

Problem 5 (20 points). Let $R(x) = \frac{7x-3}{x^2-4}$

(3 points) a) What are the zeros of $R(x)$?

$$7x-3=0$$

$$7x=3$$

$$x = \frac{3}{7}$$

(3 points) b) What are the vertical asymptotes?

$$x^2-4=0$$

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

$$x = -2 \text{ or } x = +2$$

(2 points) c) What is the end behavior of $R(x)$?

$$\text{Degree of } (7x-3) = 1$$

$$\text{Degree of } (x^2-4) = 2.$$

So end behavior is

like " $y=0$ "