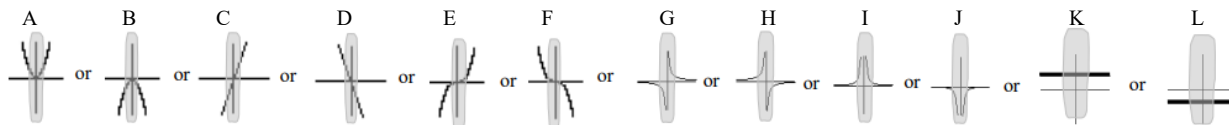


# Long Run Behavior of Rational Functions

## Section 2.5



Without a grapher, select the letter which has the same long run behavior. Find the limits at  $-\infty$  and at  $\infty$ .

$$\text{--- } a(x) = -\frac{2600x^{11} + 14x^{10} + 2x^9 + 8x^7 - 13x^6 - 3x^2 - 13x + 5}{x^7 - 3500x^4 - 13x^3 + 8x^2 + 4x - 2x + 4}$$

$$\text{--- } b(x) = -\frac{x^7 - 3500x^4 - 13x^3 + 8x^2 + 4x - 2x + 4}{2600x^{11} + 14x^{10} + 2x^9 + 8x^7 - 13x^6 - 3x^2 - 13x + 5}$$

$$\text{--- } c(x) = -\frac{2600x^{11} + 14x^{10} + 2x^9 + 8x^7 - 13x^6 - 3x^2 - 13x + 5}{-3500x^{11} - 13x^3 + 8x^2 + 4x - 2x + 4}$$

$$\text{--- } d(x) = \frac{2600x^{11} + 14x^{10} + 2x^9 + 8x^7 - 13x^6 - 3x^2 - 13x + 5}{x^7 - 3500x^4 - 13x^3 + 8x^2 + 4x - 2x + 4}$$

$$\text{--- } e(x) = \frac{x^7 - 3500x^4 - 13x^3 + 8x^2 + 4x - 2x + 4}{2600x^{11} + 14x^{10} + 2x^9 + 8x^7 - 13x^6 - 3x^2 - 13x + 5}$$

$$\text{--- } f(x) = \frac{3500x^{10} - 13x^3 + 8x^2 + 4x - 2x + 4}{10x^{10} + 2x^9 + 8x^7 - 13x^6 - 3x^2 - 13x + 5}$$

$$\text{--- } g(x) = \frac{500x^{10} - 13x^3 + 8x^2 + 4x - 2x + 4}{2x^9 + 8x^7 - 13x^6 - 3x^2 - 13x + 5}$$

$$\text{--- } h(x) = \frac{2x^9 + 8x^7 - 13x^6 - 3x^2 - 13x + 5}{500x^{10} - 13x^3 + 8x^2 + 4x - 2x + 4}$$