


Describe the end behavior for each function:

①  $f(x) = -3x^5 - 4x^2 + 2x - 9$

②  $f(x) = 8x^6 - 3x^4 + 4x^3 + 5$

③  $f(x) = 4x^3 - 6x^2 + 2x - 1$

④  $f(x) = -41x^4 - 3x^2 + 21x$

Use synthetic division to  divide each polynomial:

⑤ 
$$\frac{2x^3 - 4x^2 - 3x + 1}{x + 2}$$

⑥ 
$$\frac{4x^5 - 3x^4 + 2x^2 + 4x - 2}{x - 1}$$

Use long division to divide each polynomial:

$$\textcircled{7} \quad \frac{4x^3 - 2x^2 - 4x + 1}{x + 3}$$

$$\textcircled{8} \quad \frac{5x^4 - 2x^3 + 2x^2 - 5x - 2}{x + 2}$$

Use Descartes Rule of Sign Changes to determine the possible # of real positive & real negative zeros for each function:

$$\textcircled{9} \quad f(x) = 4x^3 - 8x^2 - 2x + 3$$

$$\textcircled{10} \quad g(x) = -2x^4 - 3x^3 + 2x^2 + 4x + 3$$

Solve each equation:

$$\textcircled{15} \quad x^3 + 3x^2 - x - 3 = 0$$

$$\textcircled{16} \quad 2x^3 + 11x^2 + 10x - 3 = 0$$