Vocabulary/Definitions

- $\circ~$ Power function
- $\circ\,$ What "dominate" means
- $\circ~$ Which of exponentials or power functions dominate
- $\circ~$ Polynomial function
- $\circ~$ Degree of a polynomial
- $\circ\,$ Number of "turns" of a polynomial
- $\circ~{\rm Zeros}$ of a polynomial
- $\circ~{\rm Rational}$ functions
- $\circ\,$ Horizontal and vertical asymptotes and how to find them

Understand

1. Find a possible formula for a polynomial which goes to $-\infty$ as $x \to -\infty$, goes to ∞ as $x \to \infty$, turns twice, has zeros at x = -1, x = 3 and x = 4, and has y-intercept (0, 5). (Hint: sketch the graph first.)

2. Without graphing it, identify all horizontal and vertical asymptotes of $y = \frac{x^2 - 5x + 6}{16 - x^2}$.