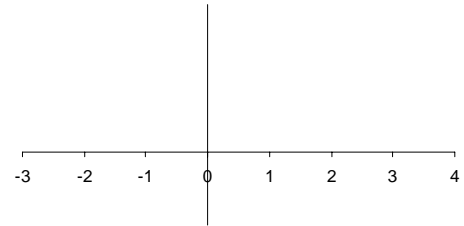


1. Consider the function $y(x) = x^6 - 2x^5 - 8x^4 + 14x^3 + 11x^2 - 28x + 12$

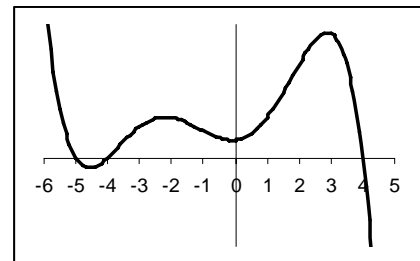
A. Plot $y(x)$ in the window $-3 \leq x \leq 4$, $-50 \leq y \leq 100$.

B. Find the zeros of $y(x)$.

C. Express $y(x)$ in factored form.



2. Create a possible equation for the polynomial graphed below. Include the sign of the leading coefficient.



3. Solve for h as a function of s and simplify: $s = 8w^{0.25}h^{0.75}$

4. Create equations of rational functions with the following characteristics:

A. A horizontal asymptote of $y = 2$ and a vertical asymptote of $x = 4$.

B. No horizontal and no vertical asymptotes.

5. Match the function expressed in words with an equation and a graph.

Average cost of producing x items.

Equation _____ Graph _____

The oxygen content in a lake after dumping in fertilizer as a function of time.

Equation _____ Graph _____

The amount of a drug (given by injection) in a body as a function of time.

Equation _____ Graph _____

The number of people purchasing a trendy new product as a function of time.

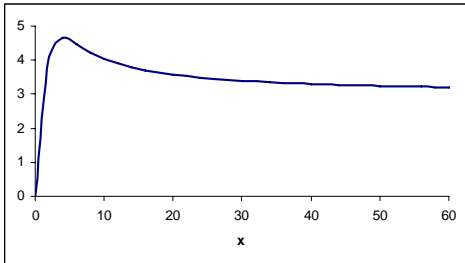
Equation _____ Graph _____

The number of people getting a particular disease during an epidemic as a function of time.

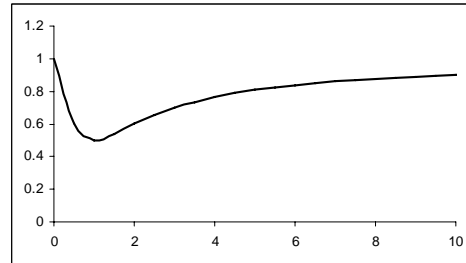
Equation _____ Graph _____

(i) $y = \frac{25x+2}{5x^3+1}$ (ii) $y = \frac{25x+6x^2}{2x^2+10}$ (iii) $y = \frac{4x^2}{x^2+9}$ (iv) $y = \frac{20x+1000}{x}$ (v) $y = \frac{x^2-x+1}{x^2+1}$

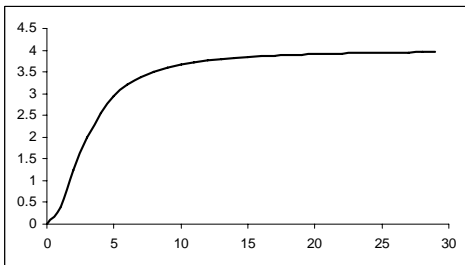
a.



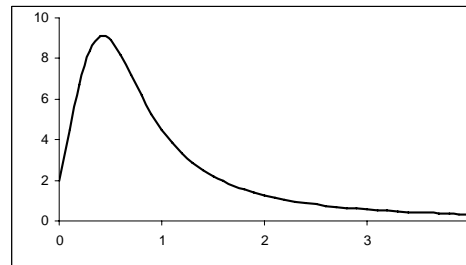
b.



c.



d.



e.

