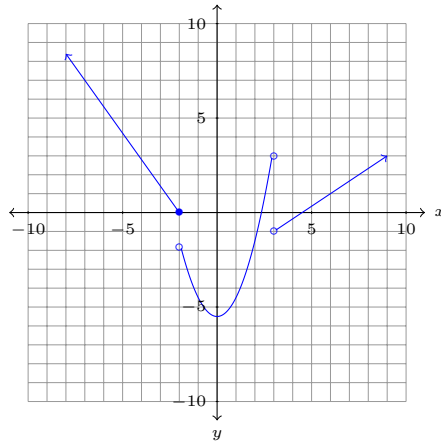




EXAM 3 REVIEW OVER CHAPTER 5

Pr 1. State the domain and range of the function given in the graph below, using interval notation.



Pr 2. Determine if $h(x) = 8x^5 - x^2 + 26x^7 - 60$ is a polynomial function or not. If the function is a polynomial, state the degree, leading coefficient, and constant term.

Pr 3. State the domain, range, vertex, y -intercept, and any x -intercepts for $f(x) = -4x^2 + 32x - 28$

Domain:

Range:

Vertex:

y -intercept:

x -intercept(s):

Pr 4. The price-demand function (in dollars) for a particular item is given by $p(x) = -0.08x + 68$, where x is the number of items. The company who produces these items has a production cost of \$4 per item and fixed costs of \$160. Determine the maximum profit for the company from the sales of this item.

Pr 5. State the domain, y -intercept (if it exists), any x -intercepts, any vertical asymptotes, and any holes for the rational function, $f(x) = \frac{x(x-3)(x+4)}{(x-1)(x-3)(x+2)}$.

Domain:

y -intercept:

x -intercept(s):

Vertical Asymptotes:

Hole(s):

Pr 6. Compute the difference quotient for $f(x) = \frac{7x}{9x-4}$.

Pr 7. State the domain of $f(x) = \frac{(x+9)\sqrt[3]{x+5}}{(7x-8)^{\frac{11}{4}}}$, using interval notation.

Pr 8. Rationalize $\frac{\sqrt{6-x}-12}{x-21}$.

Pr 9. State the domain of $h(x) = \begin{cases} \frac{5}{x-1} & \text{if } x \leq 2 \\ \sqrt{4x+1} & \text{if } x > 3 \end{cases}$, using interval notation.

Pr 10. State the domain of $f(x) = e^{\sqrt[8]{9-7x}}$, using interval notation.

Pr 11. Algebraically solve $16 \cdot 8^{2x-1} = 256$ for x .

Pr 12. You would like to save \$2500 by making an initial deposit in a savings account earning annual interest at a rate of 0.45% and leave it there for 6 years. How much should be place in the account initially, if no other deposits are made during that time and the account is compounded continuously?