

1.11A Equivalent Expressions and Binomial Theorem

AP Precalculus

Name: _____

CA #1

Convert to standard or general form and answer the questions.

1.

$$f(x) = 2(x + 2)^2$$

a. Standard Form:

b. Degree:

c. y-intercept:

2.

$$h(t) = \frac{(t + 1)(t - 5)}{3(t^3 + 1)}$$

a. General Form:

b. Horizontal Asymptote:

c. y-intercept:

Convert to factored form and answer the questions.

3.

$$f(x) = 2x^3 - 18x$$

a. Factored Form:

b. Zero(s):

c. Where is $f(x) \geq 0$?

4.

$$g(x) = \frac{2x - 6}{x^2 - 9}$$

a. Factored Form:

b. Zero(s):

c. Vertical Asymptote(s):

Use the binomial theorem to expand the following.

5. $(x - 5)^4$

6. $(2x + 1)^5$

Find the given term in the binomial expansion.7. $(x + 3)^5$ Find the 4th term.8. $(3x - 2)^6$ Find the 5th term.**Answers to 1.11A CA #1**

1. a. $2x^2 + 8x + 8$ b. 2 c. 8	2. a. $\frac{t^2 - 4t - 5}{3t^3 + 3}$ b. $y = 0$ c. $-\frac{5}{3}$	3. a. $2x(x + 3)(x - 3)$ b. $x = 0, -3, 3$ c. $[-3, 0] \cup [3, \infty)$	4. a. $\frac{2(x-3)}{(x+3)(x-3)}$ b. none ($x = 3$ is a hole) c. $x = -3$
5. $x^4 - 20x^3 + 150x^2 - 500x + 625$	6. $32x^5 + 80x^4 + 80x^3 + 40x^2 + 10x + 1$		
7. $270x^2$	8. $2160x^2$		