

Math 22 Section 9

Practice for Quiz 8

1. Find all zeros of $f(x) = x^3 + 3x^2 + 7x + 21$

2. Find a 4th degree polynomial with zeros 2 (multiplicity 2), $3i$, and $-3i$. Write the polynomial in the form

$$p(x) = ax^4 + bx^3 + cx^2 + dx + e$$

3. Find all horizontal and vertical asymptotes of the rational function $r(x) = \frac{3x+2}{x^2-6x+5}$

4. Find the exponential function that goes through the point:

(a) $(4, 16)$

(b) $(-1, 3)$

5. A certain animal population obeys the logistic growth model, described by the equation

$$P(t) = \frac{1000}{1 + 9e^{-.1t}}$$

where t is measured in years.

(a) Find the population at $t = 0$

(b) Find the population after 30 years (give an expression in terms of e)