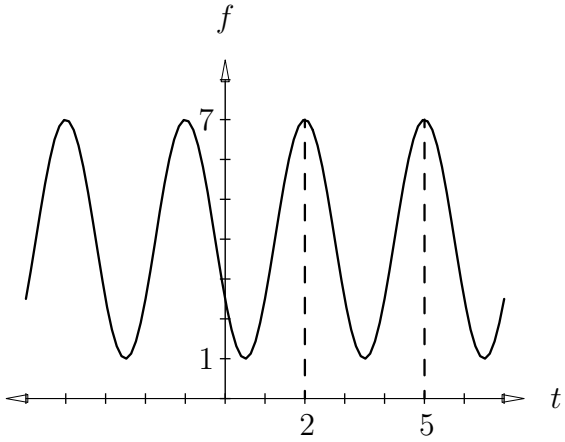
College of the Holy Cross, Fall Semester, 2005
Math 131
Worksheet 2: Trigonometric, Polynomial and Rational Functions

1. Find the amplitude and period of the function $f(t) = 3.6\cos(5(t + 0.5)) + 1.2$, and sketch the graph.

2. The graph of a function of the form $f(t) = A\cos(B(t - C)) + D$ is shown below.



   Find A, B, C and D.

3. Roughly sketch the graph of the polynomial $p(x) = x^2(x - 1)(x - 2)^2(x - 3)$. What is the degree of p?

4. Find the horizontal and vertical asymptotes of the following functions.

   (a) $f(x) = \frac{x^2-4}{2x^2+1}$

   (b) $f(x) = \frac{2x^2+1}{x^2-4}$

   (c) $f(x) = e^{-2x}$

   (d) $f(x) = \ln x$