Math 134 Spring 2018
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Homework Quiz 12   Name: _____

Show all your work and simplify your answers unless otherwise specified. If you do not turn in
a rewrite within a week (or after the fifth attempt), your score will be solidified.

1. Use either long division or synthetic division. State the quotient $q(x)$ and remainder $r(x)$.

$$(x^5 - 1) \div (x - 1)$$

2. Consider the polynomial $f(x) = x^3 - 2x^2 - 5x + 6$

   (a) Apply Descartes' Rule of Signs to determine the possible number of positive and
       negative real roots of f.

   (b) Apply the Rational Root Test to determine all possible rational roots of f.

   (c) Use Synthetic Division to find a root of f from the list in part b.

   (d) Find all the solutions to $f(x) = 0$.