Calculus Honors - M7H

Derivatives and Ranges - Homework 1

Determine the range of each of the following functions and determine whether there are any global extrema. If there are, indicate the location and the value of each global extremum.

(i) $f(x) = x^2 - 4x + 1$

(ii) $g(x) = \dfrac{x+2}{x-1}$

(iii) $h(x) = \sqrt{x+5}$

(iv) $k(x) = \sqrt{7-x}$

(v) $m(x) = x + \dfrac{1}{x}$

(vi) $L(x) = x^3 - 3x$

(vii) $R(x) = \ln(x+4)$

(viii) $P(x) = e^x$

(ix) $d(x) = \dfrac{1}{x^2+1}$

(x) $Q(x) = x^2 + \dfrac{4}{x}$

(xi) $B(x) = \dfrac{x^2+3}{x^2+1}$

(xii) $A(x) = x^3 + 2$