

MATH 215 WORKSHEET #8.5

(1) Analyze these functions for extreme points, concavity and inflection points.

(a) $f(x) = 2x^2 + 2x + 3$

(b) $h(x) = x^3 + x^2 + x + 1$

(c) $w(x) = x^4 - 2x^2 + x + 1$

(d) $f(t) = t^2 \ln t$ for $t > 0$

(e) $w(s) = s^2 e^s$

(2) Find the quadratic Taylor polynomial at the given point.

(a) $f(x) = e^x$ at $x_0 = 0$.

(b) $r(x) = \sqrt{x}$ at $x_0 = 25$.

(3) Approximate:

(a) \sqrt{e}

(b) $\sqrt{26}$

(4) If $f(x) = ax^2 + bx + c$, find a , b , c in terms of $f(0)$, $f'(0)$ and $f''(0)$.