The following are the derivatives for the problems in Assignment #24 on §3.3. You *are* expected to compute the derivatives yourself on the homework, but these can be used to check your answers before graphing.

22. $f(x) = 2 + 3x - x^3$
$f'(x) = 3(1 + x)(1 - x)$
$f''(x) = -6x$

24. $g(x) = 200 + 8x^3 + x^4$
$g'(x) = 4x^2(x + 6)$
$g''(x) = 12x(x + 4)$

25. $h(x) = 3x^5 - 5x^3 + 3$
$h'(x) = 15x^2(x - 1)(x + 1)$
$h''(x) = 60x \left(x + \frac{1}{\sqrt{2}} \right) \left(x - \frac{1}{\sqrt{2}} \right)$

26. $h(x) = (x^2 - 1)^3$
$h'(x) = 6x(x + 1)^2(x - 1)^2$
$h''(x) = 30(x + 1)(x - 1) \left(x + \frac{1}{\sqrt{5}} \right) \left(x - \frac{1}{\sqrt{5}} \right)$

29. $C(x) = x^{1/3}(x + 4)$
$C'(x) = \frac{4}{3} \left(\frac{x + 1}{x^{2/3}} \right)$
$C''(x) = \frac{4}{9} \left(\frac{x - 2}{x^{5/3}} \right)$

30. $B(x) = 3x^{2/3} - x$
$B'(x) = \frac{2 - \sqrt[3]{x}}{\sqrt[3]{x}}$
$B''(x) = -\frac{2}{3(\sqrt[3]{x})^4}$

32. $f(t) = t + \cos t$
$f'(t) = 1 - \sin t$
$f''(t) = -\cos t$