

## 7-2 Equations of Tangent Lines

Give the equation of the line tangent to the given graph at the given point. Put the equation in slope-intercept form.

\_\_\_\_\_ 1.  $f(x) = x^3 + 4x^2 - 10$  at  $(2, 14)$

\_\_\_\_\_ 2.  $f(x) = 4x^3 + 4x^2 - 4x$  at  $(1, 4)$

\_\_\_\_\_ 3.  $f(x) = x^3 + x^2$  at  $(1, 2)$

\_\_\_\_\_ 4.  $f(x) = x^5 + 4x^2 - 10x$  at  $(1, -5)$

\_\_\_\_\_ 5.  $f(x) = 2x^3 + 3x^2 - 4x$  at  $(2, 20)$

## 7-3 Critical Points (Maximums, Minimums, and Points of Inflection)

\_\_\_\_\_ 1. Find the critical points of  $f(x) = x^4 - x^2 - 6$ .

\_\_\_\_\_ 2. Find the critical points of  $f(x) = \frac{1}{4}x^4 - 2x^2$

\_\_\_\_\_ 3. Find the critical points of  $f(x) = \frac{1}{4}x^4 + x^3 - \frac{1}{2}x^2 - 3x$

\_\_\_\_\_ 4. Find the critical points of  $f(x) = \frac{1}{2}x^2 + 4x$

\_\_\_\_\_ 5. Find the critical points of  $f(x) = \frac{1}{3}x^3 - 9x$