Assignment #2-4 Secondary 3 Honors

Complete this assignment on a separate sheet of paper.

PreCalculus Book:

Pg. 179 1, 2, 12, 14, 16

Carnegie Book:

Pg. 129 1(a, b, c)

Additional Problems:

Use the quadratic formula or factoring to solve an equation of the form $f(x) = 0$ for each function.

1. $f(x) = x^2 - 2x - 3$
2. $f(x) = x^2 + 4x + 4$
3. $f(x) = 4x^2 - 9$
4. $f(x) = x^2 + 2x + 10$
5. $f(x) = -3x^2 - 6x - 11$
6. $f(x) = x^2 + 36$

Use the discriminant to determine if the function has real or imaginary zeros.

7. $f(x) = x^2 + 12x + 35$
8. $f(x) = -3x^2 + x - 9$
9. $f(x) = 9x^2 - 12x + 4$

10. Find a quadratic function that has the given zeros. Answer in standard form zeros = $7, -10$

Use the following for questions 11-13.
The Internet Bargains Company models their profit during different 20-day periods throughout the year. The function *p(x)* represents the daily profit (in thousands of dollars) on the xth day of each period. When *p(x) > 0*, the company has a daily profit. When *p(x) < 0*, the company has a daily loss.

11. The model for one 20-day period is $p(x) = 0.04(x - 10)^2 + 2$. Determine which of the days in the 20-day period the company made a profit without using a calculator. Explain your reasoning.

12. The model for one 20-day period is $p(x) = -0.1(x - 3)(x - 15)$. Determine which of the days in the period the company made a profit without using a calculator. Explain your reasoning.

13. The model for one 20-day period is $p(x) = -0.06(x - 9)^2$. Determine which of the days in the 20-day period the company made a profit without using a calculator. Explain your reasoning.

14. Find the inverse and list the domain of the original function and the domain of the inverse.
$f(x) = \sqrt{x - 5}$