SM3 HW #4-6 (Quadratics and Quadratic Form)

Date_____

Convert to vertex form. Show your work. No work, no credit.

1) $y = x^2 - 4x - 45$

2) $y = x^2 + 2x - 52$

3) $y = x^2 + 14x - 4$

4) $y = x^2 + 14x + 21$

a) Convert to intercept form. Show the box for each, or no credit.
b) Write the zeroes.

5) $y = -x^2 - 9x + 20$

6) $y = x^2 + 10x + 21$

7) $y = x^2 - x - 6$

8) $y = x^2 - 14x + 40$

9) $y = 7x^2 + 20x - 3$

10) $y = 6x^2 + 11x + 3$

11) $y = 5x^2 - 17x + 6$

12) $y = 3x^2 - 23x - 8$

Solve each equation by taking square roots.

13) $3a^2 + 9 = -15$

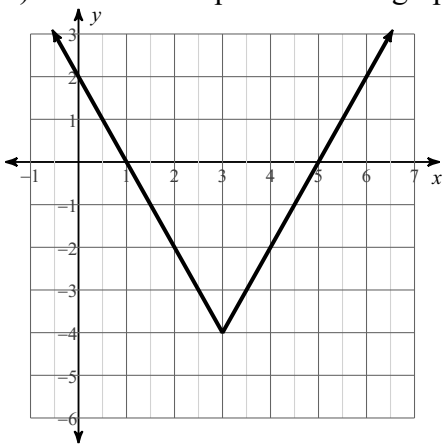
14) $64p^2 + 3 = 39$

Find all zeros.

15) $f(x) = 3x^4 + 11x^2 + 8$

16) $f(x) = 2x^4 + 7x^2 - 4$

17) Use interval notation for your answers (where appropriate)
a) Where is the function negative?
b) Where is the function positive?
c) What is the domain?
d) What is the range?
e) What is the equation of the graph?



18) Use interval notation for your answers (where appropriate)
a) Where is the function increasing?
b) Where is the function decreasing?
c) Where is the "extreme value"?
d) Is the extreme value a minimum or a maximum?
e) What is the average rate of change from x = 3 to x = 5