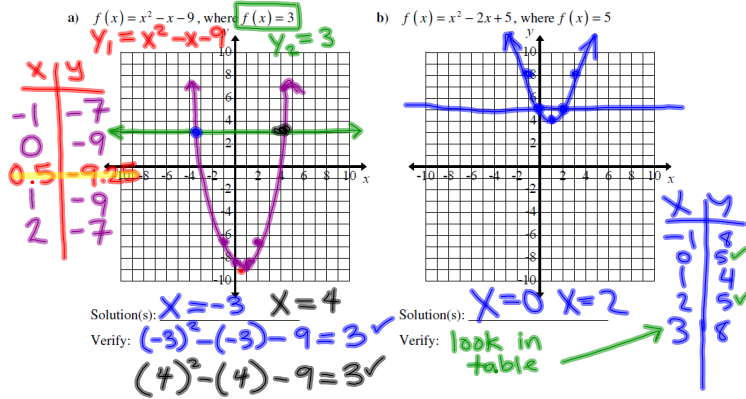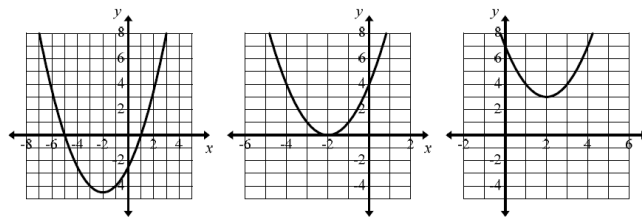4) Graph the function $f(x)$ below. Use the graph to identify the solutions to $f(x) = k$. Verify your results algebraically.

a) $f(x) = x^2 - x - 9$, where $f(x) = 3$

$Y_1 = x^2 - x - 9$ $Y_2 = 3$

x	y
-1	-7
0	-9
0.5	-9.25
1	-9
2	-7

Solution(s): $X = -3$ $X = 4$

Verify: $(-3)^2 - (-3) - 9 = 3$ ✓

$(4)^2 - (4) - 9 = 3$ ✓

b) $f(x) = x^2 - 2x + 5$, where $f(x) = 5$

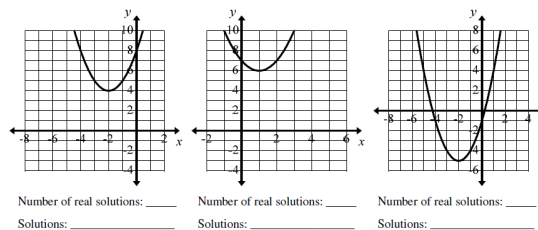| x	y
-1	8
0	5 ✓
1	4
2	5 ✓
3	8

Solution(s): $X = 0$ $X = 2$

Verify: look in table

5) Given each graph of $y = f(x)$, determine how many real solutions the equation $f(x) = 0$ would have and state those solutions.
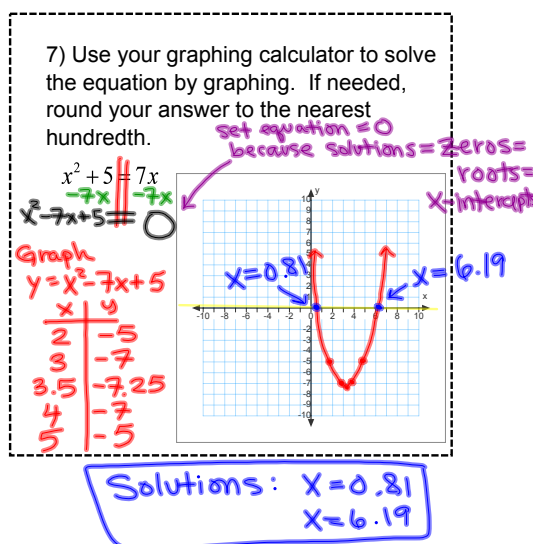

Number of real solutions: _____

Solutions: _____

Number of real solutions: _____

Solutions: _____

Number of real solutions: _____

Solutions: _____

6) Given each graph of $y = f(x)$, identify the number of real solutions for the equation $f(x) = 4$. Name the real solutions.

Number of real solutions: _____

Solutions: _____

Number of real solutions: _____

Solutions: _____

Number of real solutions: _____

Solutions: _____

tape this example onto the bottom of the page

7) Use your graphing calculator to solve the equation by graphing. If needed, round your answer to the nearest hundredth.

set equation = 0 because solutions = zeros = roots = x-intercepts

$x^2 + 5 = 7x$

$-7x \quad -7x$

$x^2 - 7x + 5 = 0$

Graph

$y = x^2 - 7x + 5$

x	y
2	-5
3	-7
3.5	-7.25
4	-7
5	-5

$X = 0.81$ $X = 6.19$

Solutions: $X = 0.81$
$X = 6.19$

HOMEWORK:

P-2

#11, 13, 15, 18