

**East Los Angeles College**  
**Department of Mathematics**  
**Math 125**  
**Final Exam Study Guide**

Solve the following for x

1)  $|x - 5| - 12 = 8$

2)  $3|x| - 8 = 10$

3)  $(x - 1)^2 = 16$

4)  $x^2 = -36$

5)  $x^2 - 4x + 6 = 0$

6)  $2x^2 - 5x + 2 = 0$

7)  $\sqrt{x - 1} = 4$

8)  $\sqrt[3]{x + 2} = -3$

9)  $2^{x-3} = 16$

10)  $5^{-x} = 25$

11)  $3^x = 8$

12)  $5^{x-2} = 12$

13)  $e^{-x} = 4$

14)  $e^{x-5} + 3 = 8$

15)  $\log(x + 5) = 2$

16)  $\log_3(x - 4) + \log_3(x + 4) = 2$

17)  $\log_4(x) - \log_4(x - 15) = 2$

18)  $\log(2x + 5) = \log(x - 3)$

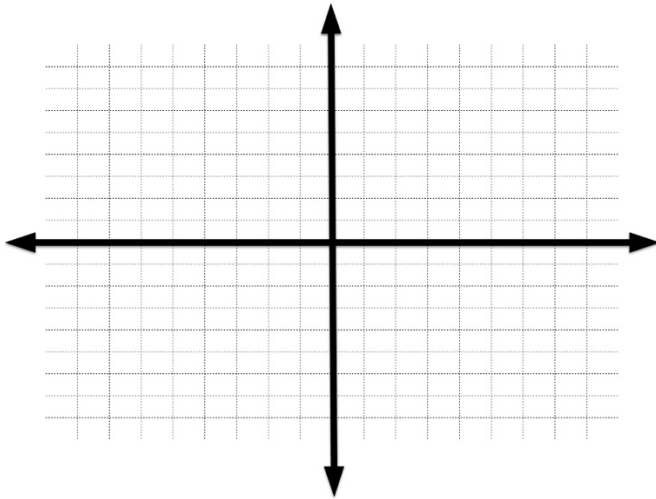
Given the quadratic  $y = -2(x+1)^2 + 3$  answer the following questions.

19) Determine the vertex

20) Determine the x-intercepts, if any.

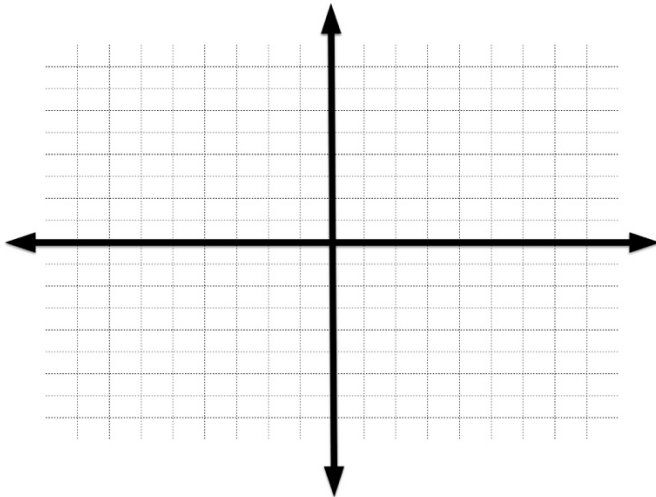
21) Determine the y-intercepts

22) Sketch the curve on the graph paper.



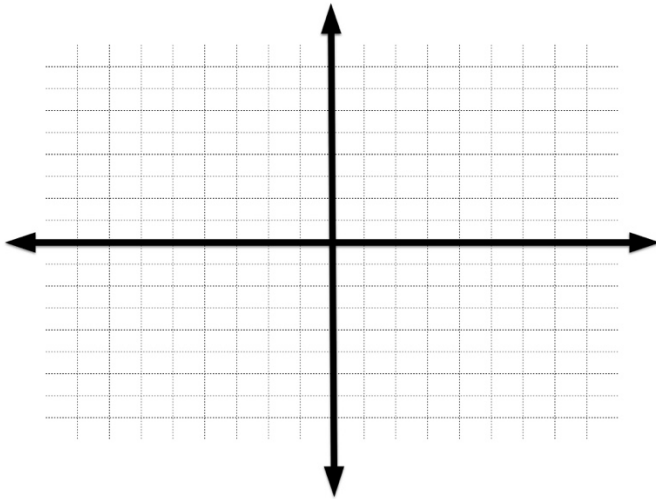
23) Complete the square and graph the following conic section.

$$x^2 - 4x + y^2 - 6y = -9$$



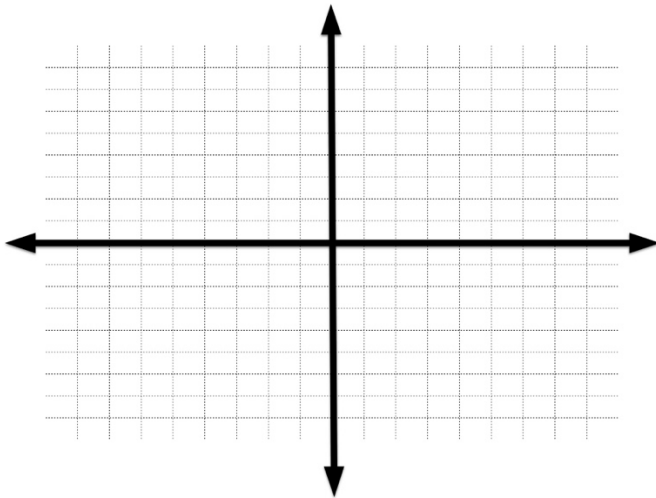
24) Complete the square and graph the following conic section.

$$x^2 + y^2 - 8y + 15 = 0$$



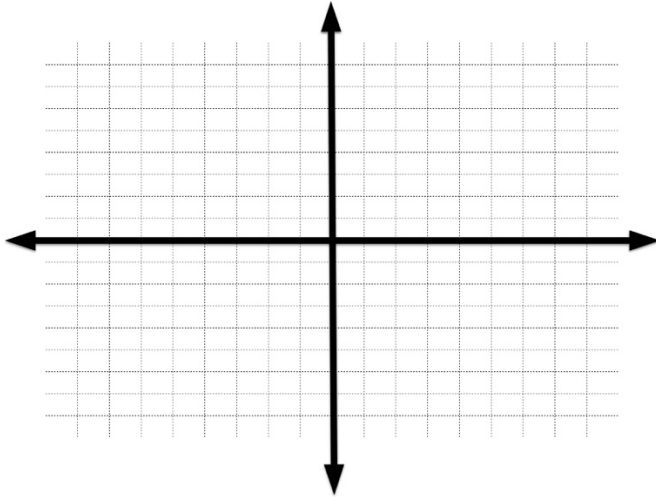
25) Complete the square and graph the following conic section.

$$(x + 1)^2 - 4(y - 1)^2 = 16$$



26) Complete the square and graph the following conic section.

$$4(x - 3)^2 + 25(y + 2)^2 = 100$$



Determine the domain for the following functions.

27)  $f(x) = \sqrt{x-7}$

28)  $f(x) = \frac{1}{2x-8}$

Determine the inverse for the following 1 to 1 function.

29)  $f(x) = 2x + 5$

30)  $f(x) = \sqrt{x-3}$

A couple invests \$ 800 at 6% annual interest. How much will the couple have in 25 years, if the interest is compounded:

31) Quarterly?

32) Monthly?

33) Continuously?

34) what is your name?

Answer Sheet

1		18	
2		19	
3		20	
4		21	
5		22	Use Graph Paper
6		23	Use Graph Paper
7		24	Use Graph Paper
8		25	Use Graph Paper
9		26	Use Graph Paper
10		27	
11		28	
12		29	
13		30	
14		31	
15		32	
16		33	
17		34	