

East Los Angeles College
Department of Mathematics
Math 125
Test 4 and Final Exam Study Guide

Solve the following for x

1) $|x - 5| - 2 = 18$

2) $3|x| + 8 = 11$

3) $(x - 1)^2 = 4$

4) $x^2 = -16$

5) $x^2 - 4x + 7 = 0$

6) $2x^2 - 5x + 3 = 0$

7) $\sqrt{x - 1} = 5$

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

9) $4^x = 2$

10) $8^x = 2$

11) $2^{x-3} = 32$

12) $5^{-x} = 125$

13) $3^x = 10$

14) $5^{x-2} = 11$

15) $e^{-x} = 5$

16) $e^{x-5} + 3 = 12$

17) $\log_2(x) = 5$

18) $\log_{36}(x) = \frac{1}{2}$

19) $\log_9(x + 1) = -2$

20) $\log_5(x) = -1$

21) $\log(x + 5) = 1$

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

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

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

Evaluate the following

25) $\log_4(16)$

26) $\log_3\left(\frac{1}{9}\right)$

27) $\log_5(125)$

28) $\log_8(2)$

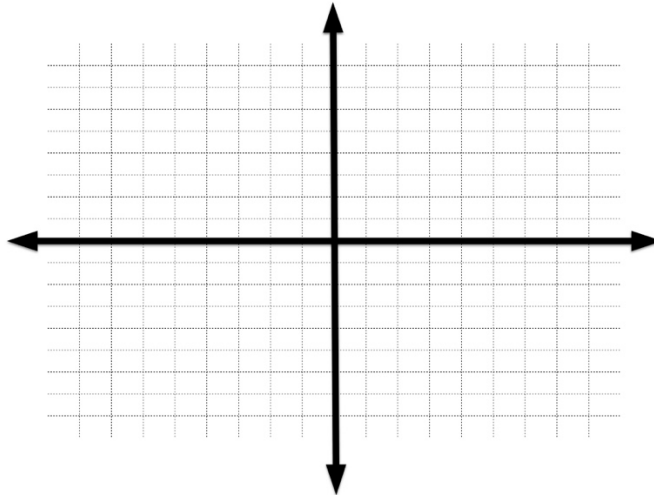
Given the quadratic $y = 2x^2 - 8x + 3$ answer the following questions.

29) Determine the vertex

30) Determine the x-intercepts, if any.

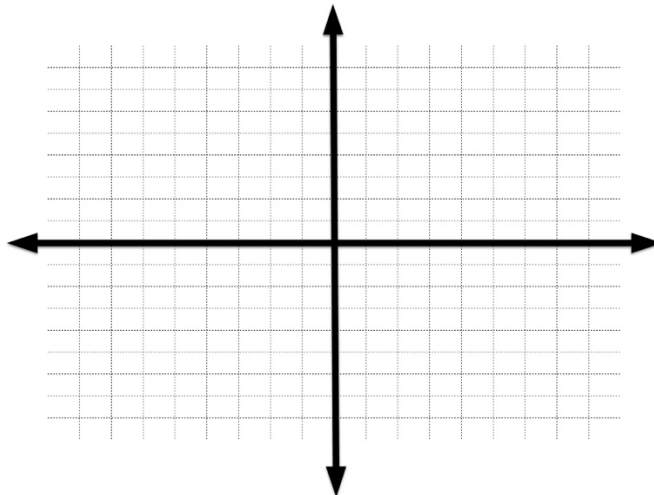
31) Determine the y-intercepts

32) Sketch the curve on the graph paper.



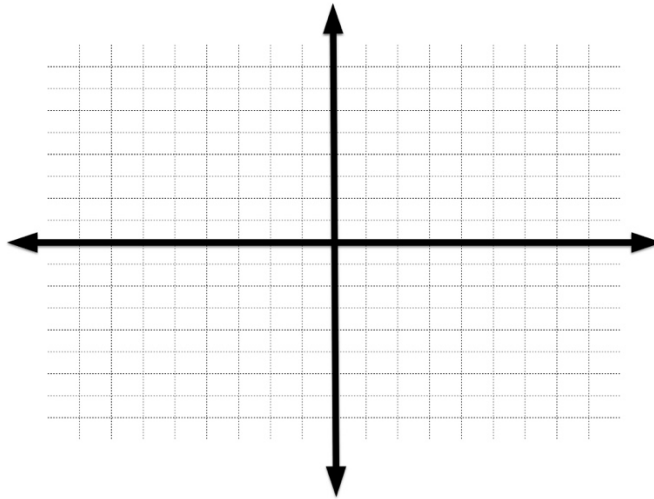
33) Complete the square and graph the following conic section.

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



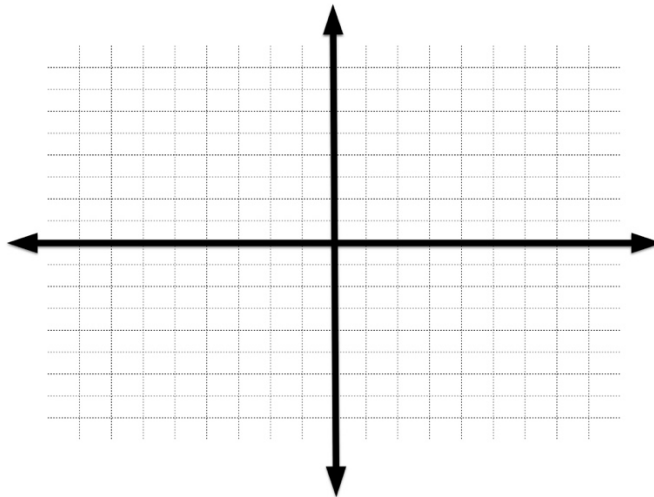
34) Complete the square and graph the following conic section.

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



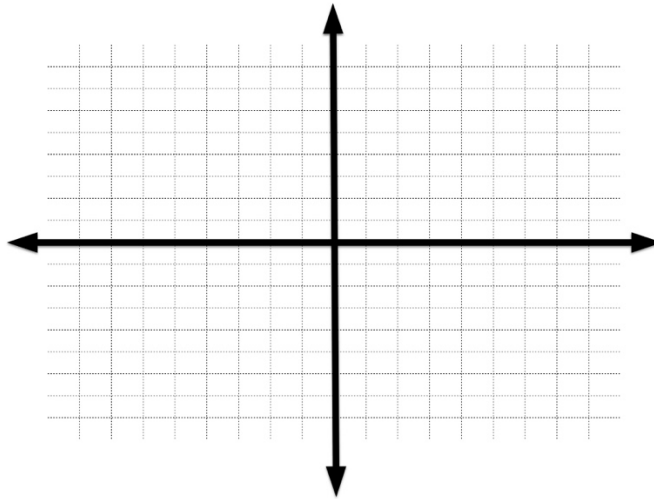
35) Complete the square and graph the following conic section.

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



36) 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.

37) $f(x) = \sqrt{x + 7}$

38) $f(x) = \frac{1}{4x-12}$

Determine the inverse for the following 1 to 1 function.

39) $f(x) = 3x + 7$

40) $f(x) = \sqrt{x + 6}$

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

41) Quarterly?

42) Monthly?

43) Continuously?

Solve and Graph.

44) $x^2 - 16 \geq 0$

45) $\frac{x^2-9}{x} \leq 0$

46) $\frac{x+1}{x-4} > 0$

47) $\frac{x+1}{x+6} < 1$

$$48) \frac{x^2+x-12}{x-1} \geq 0$$