

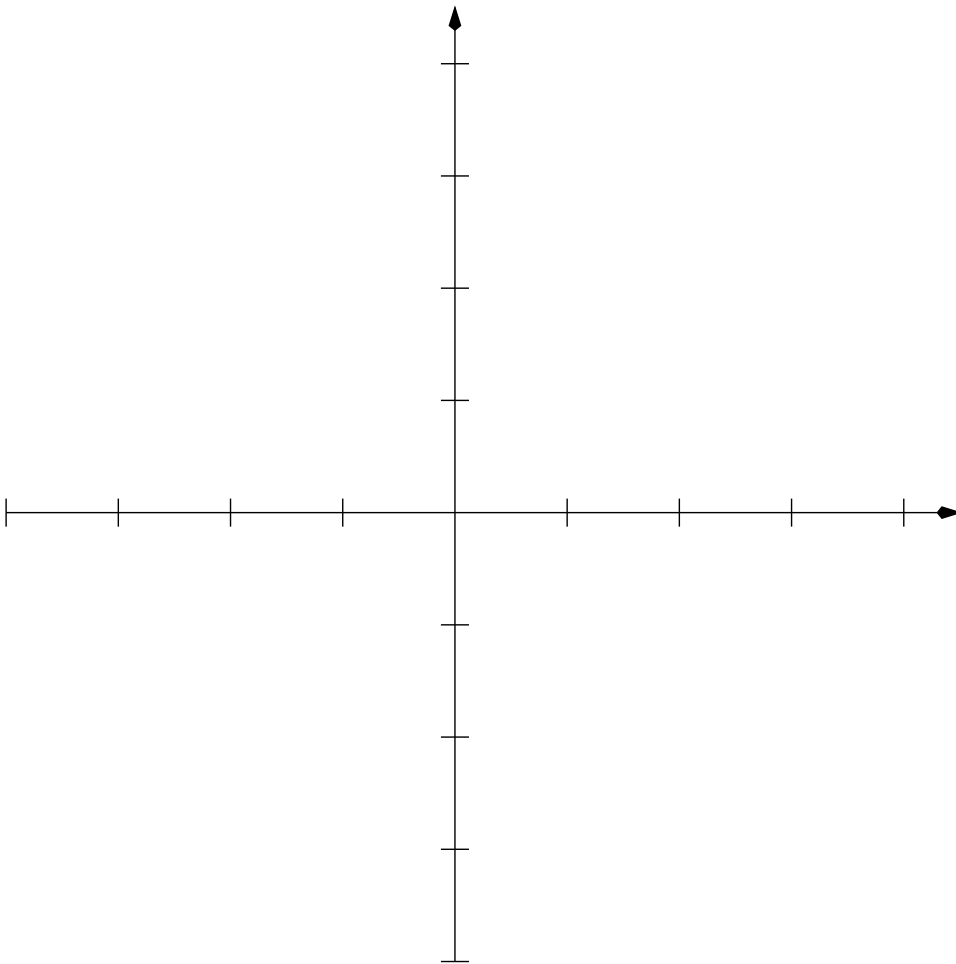
MAT112 Test 1: Chapters 1 and 2

Name:

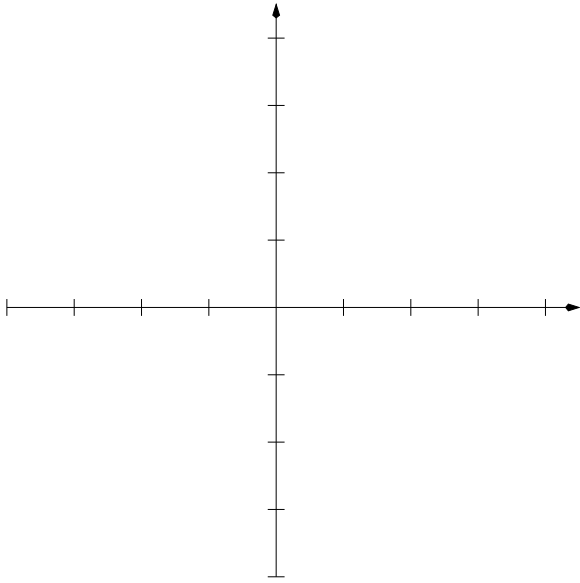
Directions: Show your work! Answers without justification will likely result in few points. Your written work also allows me the option of giving you partial credit in the event of an incorrect final answer (but good reasoning). Indicate clearly your answer to each problem (e.g., put a box around it). **Good luck!**

Problem 1 (10 pts) On the axes below, graph the following equations and clearly indicate which is which:

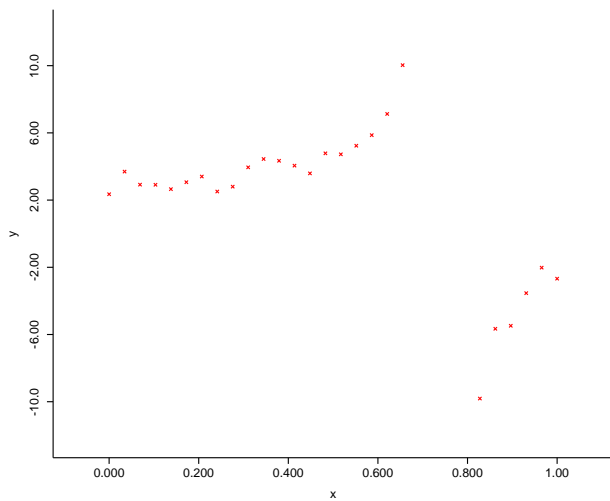
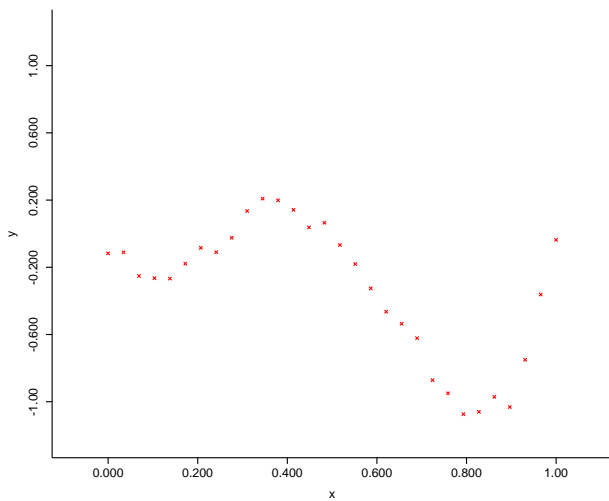
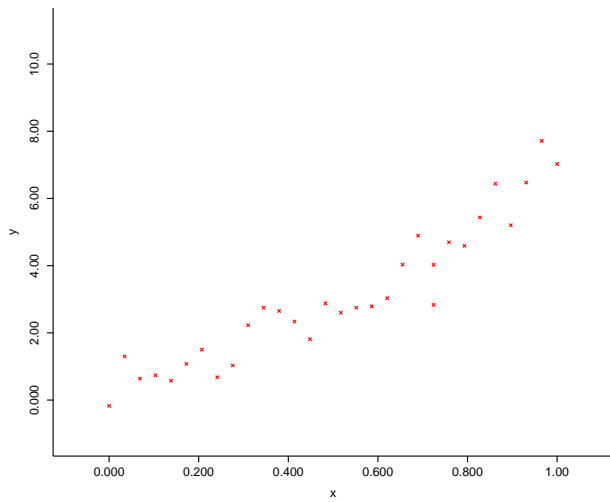
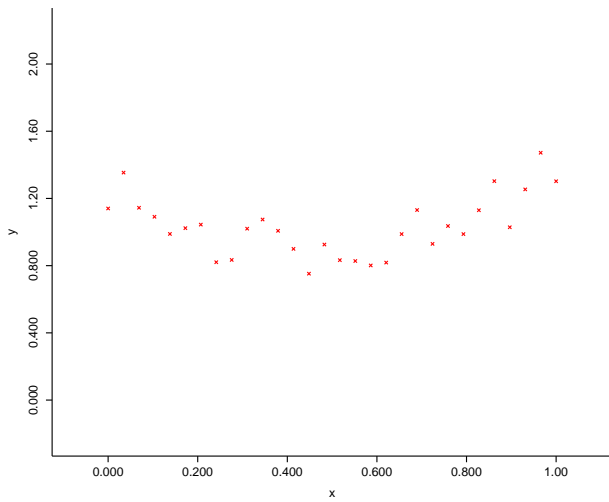
1. $y = x$
2. $y = x - 1$
3. $y = 2(x - 1)$
4. $y = -2(x - 1)$
5. $y = -2(x - 1) - 2$



Problem 4 (10 pts). Graph the function $f(x) = 2x^2 - 3x - 6$, carefully indicating the vertex, axis of symmetry, roots (i.e. x -intercepts), and y -intercept. What is its graph called?



Problem 5 (10 pts). Consider the following graphs: in each case, how might you model the data? That is, what kinds of functions would you consider using as models, and why? Which would you not consider? Write your answer on each graph.



Problem 6 (10 pts). Solve the following:

- $3^x = \frac{1}{81}$

- $3^x = 9^{2x-1}$

- Find $\log_7(49)$

Problem 7 (10 pts).

- Write $\log_{10} x = 6$ as an exponential equation, and solve it.

- Solve: $e^{x-1} = 3$ for x .

