

DUE: A-day Tuesday 09/22/15, B-day Wednesday 09/23/15

Pre-Calculus: Lesson 1.3 Graphs and Functions p. 38 #27-33 odd (sketch graph), 47, 51, 55, 57, 61-71 odd.

Please complete the assignment using the “tri-fold” method (You may use www.calcchat.com to check your work):

Increasing and Decreasing Functions In Exercises 27–34, (a) use a graphing utility to graph the function and (b) determine the open intervals on which the function is increasing, decreasing, or constant.

27. $f(x) = 3$

28. $f(x) = x$

29. $f(x) = x^{2/3}$

30. $f(x) = -x^{3/4}$

31. $f(x) = x\sqrt{x+3}$

32. $f(x) = \sqrt{1-x}$

33. $f(x) = |x+1| + |x-1|$

34. $f(x) = -|x+4| - |x+1|$



Library of Parent Functions In Exercises 47–52, sketch the graph of the function by hand. Then use a graphing utility to verify the graph.

47. $f(x) = \llbracket x \rrbracket + 2$

48. $f(x) = \llbracket x \rrbracket - 3$

51. $f(x) = \llbracket 2x \rrbracket$

Sketching a Piecewise-Defined Function In Exercises 55–62, sketch the graph of the piecewise-defined function by hand.

- ✓ 55. $f(x) = \begin{cases} 2x + 3, & x < 0 \\ 3 - x, & x \geq 0 \end{cases}$
56. $f(x) = \begin{cases} x + 6, & x \leq -4 \\ 2x - 4, & x > -4 \end{cases}$
57. $f(x) = \begin{cases} \sqrt{4 + x}, & x < 0 \\ \sqrt{4 - x}, & x \geq 0 \end{cases}$
58. $f(x) = \begin{cases} 1 - (x - 1)^2, & x \leq 2 \\ \sqrt{x - 2}, & x > 2 \end{cases}$
59. $f(x) = \begin{cases} x + 3, & x \leq 0 \\ 3, & 0 < x \leq 2 \\ 2x - 1, & x > 2 \end{cases}$
60. $g(x) = \begin{cases} x + 5, & x \leq -3 \\ -2, & -3 < x < 1 \\ 5x - 4, & x \geq 1 \end{cases}$
61. $f(x) = \begin{cases} 2x + 1, & x \leq -1 \\ x^2 - 2, & x > -1 \end{cases}$
62. $h(x) = \begin{cases} 3 + x, & x < 0 \\ x^2 + 1, & x \geq 0 \end{cases}$

Even and Odd Functions In Exercises 63–72, use a graphing utility to graph the function and determine whether it is even, odd, or neither.

63. $f(x) = 5$ 64. $f(x) = -9$
65. $f(x) = 3x - 2$ 66. $f(x) = 5 - 3x$
- ✓ 67. $h(x) = x^2 - 4$ 68. $f(x) = -x^2 - 8$
69. $f(x) = \sqrt{1 - x}$ 70. $g(t) = \sqrt[3]{t - 1}$
71. $f(x) = |x + 2|$ 72. $f(x) = -|x - 5|$