

pg. 20-22

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#41, 45, 47, 55, 57, 61, 63, 67, 71, 73

41. $g(2) = \frac{(2)^2}{(2)+1} = \frac{4}{3}$

$g(-2) = \frac{(-2)^2}{(-2)+1} = \frac{4}{-1}$ neither

45. a. domain = $[0, 4]$ $x=0$ is 2001, $x=4$ is 2005

range = $[1.2, 20]$ \rightarrow 1.2 is the y-int (from looking at function)

b. $h(2) = 4$ million 20 million households is a guess at how many there are 4 years later.

c. $h(0) = 0.5(0)^2 + 0.5(0) + 1.2$
 $= 1.2$ million

d. no, this would mean that in a given year, 0 households would have wireless and this function is increasing.

47. b. $[0, 24]$ 0 hours from taking meds \rightarrow 24 hours later

c. window = $x_{min}=0$
 $x_{max}=24$

$y_{min}=0$

$y_{max}=500$ \leftarrow (500 mg is a fair amount of medicine)

find max around 345 mg

55. domain = $(-8, -4] \cup (-2, \infty)$

range = $(-6, \infty)$

57. domain = $(-\infty, -6] \cup (0, 4) \cup [7, \infty)$

range = $(-8, \infty)$

61. a.	x	1.99	1.999	1.9999	2	2.0001	2.001	2.01
	f(x)	-100	-1000	-10000	und.	10000	1000	100

b. as it approaches 2 from the left it goes to $-\infty$
as it approaches 2 from the right it goes to $+\infty$

c. yes

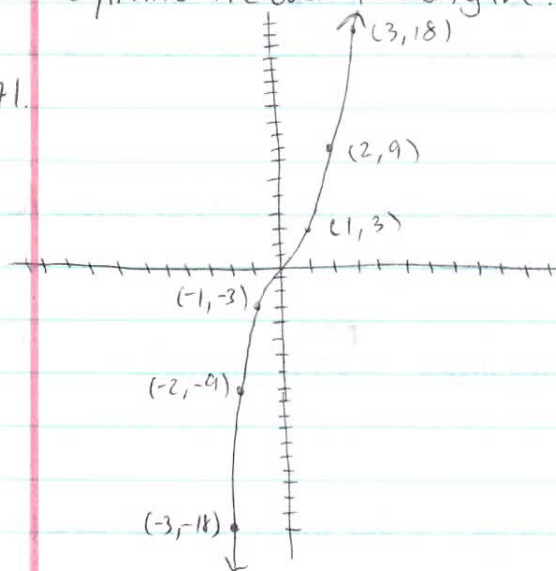


d. The function is discontinuous at 2 and it confirms what we saw in the table.

63. even $g(1) = (1)^2 - 37 = -36$
 $g(-1) = (-1)^2 - 37 = -36$
Symmetric over y-axis.

67. odd $h(2) = (2)^5 - 17(2)^3 + 16(2) = -72$
 $h(-2) = (-2)^5 - 17(-2)^3 + 16(-2) = 72$
Symmetric over the origin.

71.



73. If you have multiple y-intercepts then there will be multiple points on the y-axis. This would fail the vertical line test.