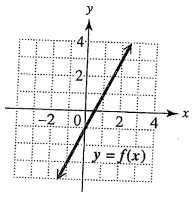
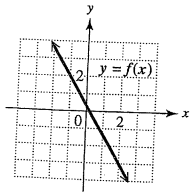
48. $-x^2 - 4x + 1$ **49.** $-3x - 2$
50. $-3a - 8$ **51.** $-6m + 13$
52. $-9t + 10$ **53.** (a) 2 (b) 3
54. (a) 5 (b) 11
55. (a) 15 (b) 10
56. (a) 1 (b) 7
57. (a) 3 (b) -3
58. (a) -3 (b) 2
59. (a) $f(x) = -\frac{1}{3}x + 4$ (b) 3
60. (a) $f(x) = \frac{1}{4}x - 2$ (b) $-\frac{5}{4}$
61. (a) $f(x) = -2x^2 + 3$
(b) -15
62. (a) $f(x) = 3x^2 + 2$ (b) 29
63. (a) $f(x) = \frac{4}{3}x - \frac{8}{3}$ (b) $\frac{4}{3}$
64. (a) $f(x) = \frac{2}{5}x + \frac{9}{5}$ (b) 3
66. .164 square unit **67.** -4
68. -3
69. (a) 0 (b) 4 (c) 2 (d) 4
70. (a) 5 (b) 0 (c) 2 (d) 4

57.



58.



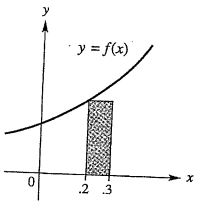
An equation that defines y as a function of x is given. ***(a)*** *Solve for y in terms of x and replace y with the function notation f(x).* ***(b)*** *Find f(3). See Example 9.*

59. $x + 3y = 12$ **60.** $x - 4y = 8$ **61.** $y + 2x^2 = 3$
62. $y - 3x^2 = 2$ **63.** $4x - 3y = 8$ **64.** $-2x + 5y = 9$

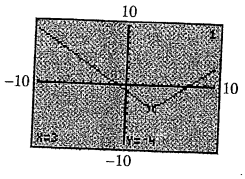
65. If (3,4) is on the graph of $y = f(x)$, which one of the following must be true: $f(3) = 4$ or $f(4) = 3$? Explain your answer.

Concept Check *Answer each question.*

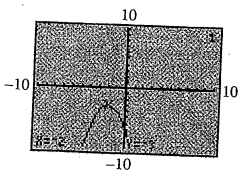
66. The figure shows a portion of the graph of $f(x) = x^2 + 3x + 1$ and a rectangle with its base on the x-axis and a vertex on the graph. What is the area of the rectangle? (*Hint:* $f(.2)$ is the height.)



67. The graph of $Y_1 = f(X)$ is shown with a display at the bottom. What is $f(3)$?

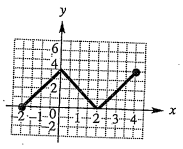


68. The graph of $Y_1 = f(X)$ is shown with a display at the bottom. What is $f(-2)$?



Concept Check *Use the graph of $y = f(x)$ to find each function value:* ***(a)*** *$f(-2)$,* ***(b)*** *$f(0)$,* ***(c)*** *$f(1)$, and* ***(d)*** *$f(4)$.*

69.



70.