

## C2L1 Answers

16. no

18. Yes

D: {less than 9<sup>th</sup>, 9<sup>th</sup> – 12<sup>th</sup>, high school graduate, some college, college graduate}

R: {\$18120, \$23251, \$36055, \$45810, \$67165}

20. Yes

D: {-2, -1, 3, 4}

R: {3, 5, 7, 12}

22. yes

D: {0, 1, 2, 3}

R: {-2, 3, 7}

24. no

26. yes

D: {-2, -1, 0, 1}

R: {3, 4, 16}

27. yes

28. yes

29. yes

30. yes

31. no

32. no

33. no

34. no

35. yes

36. yes

37. no

38. no

40. a.  $f(0) = -1$

b.  $f(1) = -2$

c.  $f(-1) = -4$

d.  $f(-x) = -2x^2 - x - 1$

e.  $-f(x) = 2x^2 - x + 1$

f.  $f(x + 1) = -2x^2 - 3x - 2$

g.  $f(2x) = -8x^2 + 2x - 1$

h.  $f(x + h) = -2x^2 - 4xh - 2h^2 + x + h - 1$

48.  $(-\infty, \infty)$

50.  $(-\infty, \infty)$

52.  $(-\infty, -2)(-2, 2)(2, \infty)$

54.  $(-\infty, -2)(-2, 0)(0, 2)(2, \infty)$

56.  $(-\infty, 1]$

58.  $(4, \infty)$

60.  $(-\infty, -2]$

62.  $[-3, 2)(2, \infty)$

64. a.  $(f + g)(x) = 5x - 1$  D:  $(-\infty, \infty)$   
 b.  $(f - g)(x) = -x + 3$  D:  $(-\infty, \infty)$   
 c.  $(f \cdot g)(x) = 6x^2 - x - 2$  D:  $(-\infty, \infty)$   
 d.  $\left(\frac{f}{g}\right)(x) = \frac{2x+1}{3x-2}$  D:  $\left(-\infty, \frac{2}{3}\right) \left(\frac{2}{3}, \infty\right)$   
 e.  $(f + g)(3) = 14$   
 f.  $(f - g)(4) = -1$   
 g.  $(f \cdot g)(2) = 20$   
 h.  $\left(\frac{f}{g}\right)(1) = 3$

65. a.  $(f + g)(x) = 2x^2 + x - 1$  D:  $(-\infty, \infty)$   
 b.  $(f - g)(x) = -2x^2 + x - 1$  D:  $(-\infty, \infty)$   
 c.  $(f \cdot g)(x) = 2x^3 - 2x^2$  D:  $(-\infty, \infty)$   
 d.  $\left(\frac{f}{g}\right)(x) = \frac{x-1}{2x^2}$  D:  $(-\infty, 0)(0, \infty)$   
 e.  $(f + g)(3) = 20$   
 f.  $(f - g)(4) = -29$   
 g.  $(f \cdot g)(2) = 8$   
 h.  $\left(\frac{f}{g}\right)(1) = 0$

75.  $4, h \neq 0$

76.  $-3, h \neq 0$

77.  $2x + h - 1, h \neq 0$

78.  $6x + 3h - 2, h \neq 0$

**84.  $b = 5$**

**86.  $b = -1$**

**89.  $A(x) = \frac{x^2}{2}$**

**90.  $A(x) = \frac{x^2}{2}$**

**91.  $G = 10x$**

**92.  $G = 100 + 10x$**

**94. a. Independent: Number of rooms**

**Dependent: Number of housing units in millions**

**b.  $N(3) = 15.64$**

**There are 15.64 housing units with three rooms.**

**96. a.  $H(1) = 7$  m**

**$H(1.1) = 4.27$  m**

**$H(1.2) = 1.28$  m**

**b. The height is 15 m at 0.62 seconds.**

**The height is 10 m at 0.88 seconds.**

**The height is 5 m at 1.07 seconds.**

**c. The rock will hit the ground after 1.24 seconds.**