

section 3.5

3.5 LI

284) domain a) $\{1, 2, 3, 4, 5\}$

range b) $\{-2, -4, -6, -8, -10\}$

286) domain a) $\{11, -2, 4, -6\}$

range b) $\{3, -7, -8, 17, 9\}$

290) a) $\{(130, 18.1), (140, 19.5), (150, 20.9), (160, 22.3), (170, 23.7),$
 $(180, 25.1), (190, 26.5), (200, 27.9)\}$

b) $\{130, 140, 150, 160, 170, 180, 190, 200\}$

c) $\{18.1, 19.5, 20.9, 22.3, 23.7, 25.1, 26.5, 27.9\}$

for 291-294 graphs are located in on-line text

292) a) $\{(-3, -4), (-3, 4), (-2, 0), (-1, 3), (1, 5), (4, -2)\}$

b) $\{-3, -2, -1, 1, 4\}$

c) $\{-4, 0, 3, 5, -2\}$

for 295-302 open on-line text to see the list of values

298) a) yes because domain (x) numbers is not repeated.

b) $\{-3, -2, -1, 0, 1, 2, 3\}$

c) $\{-27, -8, -1, 0, 1, 8, 27\}$

302) a) yes because domain "names" is not repeated. 3.5 2

b) {Jon, Rachel, Matt, Leslie, Chris, Beth, Liz}

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304-a) $y = 3x - 5$

yes
"polynomial"

304-b) $y = x^3$

yes
"polynomial"

304-c) $x + y^2 = -5$

$$\begin{array}{r} -x \qquad -x \\ y^2 = -x - 5 \\ y = \pm \sqrt{-x - 5} \end{array}$$

no

306-a) $2x - 4y = 8$

$$\begin{array}{r} -8 + 4y \quad -8 + 4y \\ \hline \frac{2x - 8}{4} = \frac{4y}{4} \\ \frac{1}{2}x - 2 = y \end{array}$$

yes
"polynomial"

306-b) $-4 = x^2 - y$

$$\begin{array}{r} +y + 4 \quad +4 + y \\ \hline y = x^2 + 4 \end{array}$$

yes
"polynomial"

306-c) $y^2 = -x + 5$

$$y = \pm \sqrt{-x + 5}$$

no

308) $f(x) = 3x + 4$

a) $f(2) = 3(2) + 4 = 6 + 4 = \underline{10}$

b) $f(-1) = 3(-1) + 4 = -3 + 4 = \underline{1}$

c) $f(a) = 3(a) + 4 = \underline{3a + 4}$

310) $f(x) = -6x - 3$

a) $f(2) = -6(2) - 3 = -12 - 3 = \underline{-15}$

b) $f(-1) = -6(-1) - 3 = 6 - 3 = \underline{3}$

c) $f(a) = -6(a) - 3 = \underline{-6a - 3}$

$$312) f(x) = x^2 + x - 2$$

$$a) f(2) = (2)^2 + (2) - 2 = 4 + 2 - 2 = \underline{\underline{4}}$$

$$b) f(-1) = (-1)^2 + (-1) - 2 = 1 - 1 - 2 = \underline{\underline{-2}}$$

$$c) f(a) = (a)^2 + (a) - 2 = \underline{\underline{a^2 + a - 2}}$$

$$314) f(x) = 3x^2 + x - 2$$

$$a) f(2) = 3(2)^2 + (2) - 2 = 3(4) + 2 - 2 = \underline{\underline{12}}$$

$$b) f(-1) = 3(-1)^2 + (-1) - 2 = 3(1) - 1 - 2 = 3 - 3 = \underline{\underline{0}}$$

$$c) f(a) = 3(a)^2 + (a) - 2 = \underline{\underline{3a^2 + a - 2}}$$

$$316) g(x) = 5x - 8$$

$$a) g(h^2) = 5(h^2) - 8 = \underline{\underline{5h^2 - 8}}$$

$$b) g(x+2) = 5(x+2) - 8 = 5x + 10 - 8 = \underline{\underline{5x + 2}}$$

$$\begin{aligned} c) g(x) + g(2) &= \{5(x) - 8\} + \{5(2) - 8\} = \{5x - 8\} + \{10 - 8\} \\ &= 5x - 8 + 2 = \underline{\underline{5x - 6}} \end{aligned}$$

$$318) g(x) = -8x + 2$$

$$a) g(h^2) = -8(h^2) + 2 = \underline{\underline{-8h^2 + 2}}$$

$$b) g(x+2) = -8(x+2) + 2 = -8x - 16 + 2 = \underline{\underline{-8x - 14}}$$

$$\begin{aligned} c) g(x) + g(2) &= \{-8(x) + 2\} + \{-8(2) + 2\} \\ &= \{-8x + 2\} + \{-16 + 2\} \\ &= -8x + 2 + \{-14\} = \underline{\underline{-8x - 12}} \end{aligned}$$

$$322) g(x) = 4x^2 - 3x$$

$$g(3) = 4(3)^2 - 3(3) = 4(9) - 9 = 36 - 9 = \underline{\underline{27}}$$

$$324) G(x) = 3x^2 - 5x + 2$$

$$G(-2) = 3(-2)^2 - 5(-2) + 2 = 3(4) + 10 + 2 = 12 + 12 = \underline{\underline{24}}$$

$$326) h(y) = 3|y-1| - 3$$

$$h(-4) = 3|(-4)-1| - 3 = 3|-5| - 3 = 3(5) - 3 = 15 - 3 = \underline{\underline{12}}$$

$$328) g(x) = \frac{x-2}{x+2}$$

$$g(4) = \frac{(4)-2}{(4)+2} = \frac{2}{6} = \underline{\underline{\frac{1}{3}}}$$

$$332) C(x) = 7.25x + 2500$$

a) x - independent (amount of items manufactured)

$C(x)$ - dependent (total daily cost)

$$b) C(0) = 7.25(0) + 2500 = 2500$$

daily cost without any items manufactured

$$c) C(1000) = 7.25(1000) + 2500 = 7250 + 2500 = 9750$$

daily cost of manufacturing 1000 items