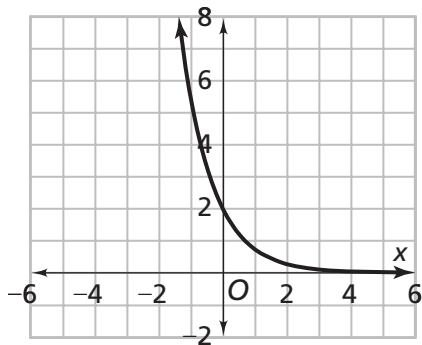


Practice Workbook Answers (continued)

Lessons 3.11 and 3.12 Additional Practice

- a. \$1273.08
b. \$1274.01
c. \$1274.16
d. \$1274.20
- a. \$2210.34; \$2568.05; $2000e^{0.05t}$
b. approximately 13.86 years
c. approximately 8.1 years
- 7% compounded monthly
- a. $c(0.03) \approx 1.03045$ and $f(0.03) \approx 1.03045$
Percent error is close to zero.
b. $c(0.04) \approx 1.0408$ and $f(0.04) \approx 1.0408$
Percent error is close to zero.
 $c(0.8) \approx 2.205$ and $f(0.8) \approx 2.226$
Percent error is approximately -0.9% .
 $c(1.1) \approx 2.9268$ and $f(1.1) \approx 3.0042$
Percent error is approximately -2.6% .
- e^3
- a. $k \approx 1.3863$
b. $m \approx 2.0794$
c. $n \approx 2.4849$
d. $p \approx 2.7726$
- a.



- b. $m = -2$
c. $(-0.405, 1.333)$
d. $(-0.693, 1)$

Lessons 3.13 and 3.14 Additional Practice

- a. $x \approx 2.096$
b. $x \approx 3.336$
c. $x \approx -2.930$
d. $x \approx 1.674$
- a. 1.386
b. 2.197
c. -0.288
d. 3.932
- a. \$580.92; \$784.16; \$911.06
b. approximately 9.4 years
c. approximately 13.9 years
- a. 8.155
b. 218.4
c. 4
d. 1
- a. $f(x) = 3^x$
b. The slope is $3^2 \ln 3 \approx 9.888$.
c. The slope is $4^2 \ln 4 \approx 22.181$.
- a. $(\ln 6, 6)$
b. The y-intercept is $-6 \ln 6 + 6 \approx -4.75$.
The y-intercept is negative.

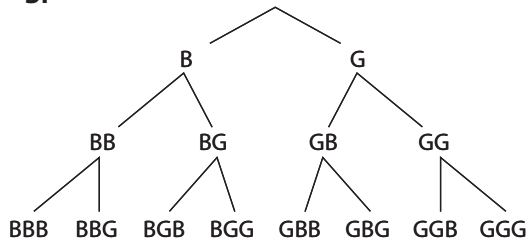
Chapter 4

Lesson 4.2 Additional Practice

- a. These problems are isomorphic. To find the answers to both, you add $25 + 15 = 40$.
b. These problems are not isomorphic. A different formula is used to calculate the area and perimeter of a triangle.
- Answers may vary. Sample: Jack has \$200 saved, he just earned \$20 for cutting the neighbors grass and added it to his savings. How much money does Jack have in total?

Practice Workbook Answers (continued)

3.



4. 8

5. These problems are isomorphic.

6. There are 56 hooves at the farm.
Check students' answers.

7. a. Answers may vary. Sample: A class has 21 students and the teacher wants them to do a project in groups of three. How many groups will there be?

b. Answers may vary. Sample: Jack went on a fishing trip. He caught two fish the first day, five fish the second day, and seven fish on the third day. How many fish did he catch in total?

c. Answers may vary. Sample: Joe has three quarters and six dimes in each of his two pockets. How many coins does he have in all?

d. Answers may vary. Sample: What is the area of a rectangle with a length of eight meters and a width of four meters?

Lessons 4.3 and 4.4 Additional Practice

- 720 ways
- 448 three-digit numbers
- 1024 numbers
- 57,600 possible numbers
- 2,028,000 license plates
- $2^4 = 16$ functions

7. There are at most 9330 words.

8. a. 64 different functions
b. 24 one-to-one functions
c. 40 not one-to-one functions

9. a. 400^{50} functions
b. $400^{50} \approx 1.27 \cdot 10^{130}$

10. 60,480 functions

Lessons 4.6 and 4.7 Additional Practice

1. 7,880,400 ways

2. a. 4536 numbers
b. 9 numbers

3. a. 720
b. 360
c. 120
d. 20

4. a. 80
b. 16
c. 20

5. 35

6. 92,534,750

7. 120

8. a. 1365
b. 364
c. 1001

Lesson 4.8 Additional Practice

1. a. 5040
b. 720
c. 1440

2. a. 60
b. 20
c. 180

3. a. 220
b. 495

4. 54

Practice Workbook Answers (continued)

5. a. 3125
b. 120
6. 136
7. a. 24,420
b. 55,440

Lesson 4.10 Additional Practice

1. a. $64x^6 + 192x^5y + 240x^4y^2 + 160x^3y^3 + 60x^2y^4 + 12xy^5 + y^6$
b. $x^{10} + 15x^8y + 90x^6y^2 + 270x^4y^3 + 405x^2y^4 + 243y^5$
2. a. 780
b. 62,852,101,650
c. 3,838,380
d. 847,660,528
3. a. Answers may vary. Sample:
 $(2 + x)^5 = 32 + 80x + 80x^2 + 40x^3 + 10x^4 + x^5$
b. Answers may vary. Sample:
 $(1 + x)^4 = 1 + 4x + 6x^2 + 4x^3 + x^4$
4. a. $\binom{n}{0}x^n - 2\binom{n}{1}x^{n-1} + 4\binom{n}{2}x^{n-2} + \dots + (-2)^k\binom{n}{k}x^k + \dots + (-2)^{n-1}\binom{n}{n-1}x + (-2)^n\binom{n}{n}$
b. $\binom{n}{0}x^n - 2\binom{n}{1}x^{n-1}y + \binom{n}{2}x^{n-2}y^2 + \dots + \binom{n}{k}x^k(-y)^k + \dots + \binom{n}{n-1}x(-y)^{n-1} + \binom{n}{n}(-y)^n$
5. Use the Binomial Theorem to expand $(1 - 1)^6$, $(1 - 1)^3$, and $(1 - 1)^{12}$. All of these sums are zero.

Lesson 4.11 Additional Practice

1. a. 6
b. 20
c. 15
2. a. 0, {a}, {b}, {c}, {a, b}, {a, c}, {b, c}, {a, b, c}
b. 3
c. {a, b}, {a, c}, {b, c}
3. Every set of six elements has only one six-element subset—the set itself. So, $\binom{6}{6} = 1$.
4. 255
5. a. 15,504
b. 3876
c. 11,628
d. $3876 + 11,628 = 15,504$

Chapter 5

Lessons 5.2 and 5.3 Additional Practice

1. $F(n) = \begin{cases} -2 & \text{if } n = 0 \\ F(n - 1) + 3n & \text{if } n > 0 \end{cases}$
2. $G(n) = \begin{cases} 2 & \text{if } n = 0 \\ G(n - 1) + n + 2 & \text{if } n > 0 \end{cases}$
3. $B(n) = \begin{cases} 800 & \text{if } n = 0 \\ 1.04 \cdot B(n - 1) + 800 & \text{if } n > 0 \end{cases}$

4.

a	h(a)
0	2
1	9
2	16
3	23
4	30
5	37

$$h(a) = 7a + 2$$