

Lesson 6-1

Equivalent Ratios

1. 7 to 17, 7:17, $\frac{7}{17}$
2. 6 to 11, 6:11, $\frac{6}{11}$
3. C
4. 35; 72
5. $\frac{1}{2}$
6. $\frac{1}{4}$
7. **a.** 7 to 3; 7:3; $\frac{7}{3}$
b. Answers will vary.
8. 23 to 41; 23:41; $\frac{23}{41}$
9. 12
10. **a.** D
b. D
11. $\frac{8}{9}$
12. **a.** $\frac{4}{7}$
b. Answers will vary.
13. **a.** Answers will vary.
b. C
14. **a.** $\frac{7}{18}$
b. Answers will vary.
c. Answers will vary.
15. **a.** E
b. A
16. **a.** 200
b. Answers will vary.
17. **a.** A
b. $\frac{3}{16}$
18. 36
19. $\frac{5}{12}$

Lesson 6-2

Unit Rates

1. 695 km/hr
2. 22 meters per second
3. 4 eggs/hen
4. \$5.89
5. The 18-oz package of rice is the best buy.
6. 1,380 people
7. \$8.75

8. **a.** 23 miles per gallon
b. Answers will vary.
c. Answers will vary.
9. **a.** 20 mm/min
b. Answers will vary.
c. Answers will vary.
10. **a.** \$1.23
b. D
11. Company C
12. **a.** Answers will vary.
b. \$0.21
13. **a.** 330 sec
b. 320.74 sec
14. \$0.70/mile
15. \$33.82
16. \$5.70
17. **a.** C
b. 14-ounce
18. Company B
19. \$15.75
20. A package of the 6.5-oz cans is the best buy.
21. **a.** 25
b. 12
c. 10
22. The 26-oz package is the best buy.
23. **a.** 12 miles per gallon
b. Answers will vary.

Lesson 6-3

Unit Rates With Fractions

1. $\frac{3}{32}$
2. **a.** 39 pages/hr
b. $\frac{1}{39}$ hr/page
3. 2 in./min
4. **a.** $5\frac{1}{4}$
b. Answers will vary.
5. 13 mi/hr
6. $30\frac{4}{5}$ mi/gal

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- 7. a. $28\frac{2}{5}$ in./hr
- b. 34 mi/gal
- c. red
- 8. a. $\frac{1}{2}$ in./hr
- b. $\frac{1}{3}$ in./hr
- c. scented
- d. Answers will vary.
- 9. a. 120
- b. 480
- 10. a. $\frac{1}{12}$ c of milk/muffin
- b. 12 muffins/c of milk
- c. Answers will vary.
- 11. a. A
- b. $\frac{1}{6}$
- c. 6
- 12. a. 4 lb/qt
- b. D
- 13. a. $31\frac{3}{4}$ mi/hr
- b. Answers will vary.
- 14. a. $\frac{5}{48}$ hr/task
- b. $9\frac{3}{5}$ tasks/hr
- c. Answers will vary.
- 15. a. $1\frac{1}{5}$ in./ft
- b. Fence B is 6 in. long on the blueprint.
- 16. a. A
- b. $2\frac{9}{10}$
- 17. a. $22\frac{1}{2}$ lb of the wood/yd²
- b. $67\frac{1}{2}$ lb of the wood in all
- 18. a. Noah was $4\frac{1}{6}$ mi/hr.
- b. Emily was $4\frac{1}{2}$ mi/hr.
- c. Anna was $4\frac{2}{3}$ mi/hr.
- d. Anna ran the fastest.
- e. Answers will vary.

Lesson 6-4 Converting Units

- 1. 48 feet
- 2. 5 quarts

- 3. 33.02 centimeters
- 4. 13 inches
- 5. 5,452.8 grams
- 6. 1.2 pounds
- 7. a. Answers will vary.
- b. 37.6 liters
- 8. A
- 9. B
- 10. a. B
- b. B
- 11. 15 gal
- 12. a. 7.25 gallons
- b. B
- 13. 52 inches
- 14. 4-gallon jug
- 15. 252 kilometers
- 16. D
- 17. B
- 18. 36.67 feet per second
- 19. 805 miles

Lesson 6-5 Additional Problem Solving

- 1. a. $\frac{4}{9}$
- b. $\frac{16}{81}$
- 2. 40 min to get to the campsite
- 3. $13\frac{1}{3}$ c of ingredient B
- 4. a. $2\frac{5}{6}$ ft of redwood
- b. Answers will vary.
- 5. a. $\frac{1}{54}$
- b. D
- 6. a. $\frac{1}{9}$
- b. $\frac{1}{81}$
- c. Answers will vary.
- 7. a. Yes
- b. Answers will vary.
- 8. a. about 30 min to travel $4\frac{9}{10}$ km
- b. $29\frac{11}{101}$ min to travel $4\frac{9}{10}$ km

- 9. a. B
b. 24
c. $22\frac{2}{5}$
d. Friday
- 10. $\frac{1}{9}$
- 11. a. $2\frac{1}{3}$ tsp of mustard seeds
b. $7\frac{1}{2}$ c of beans
- 12. a. C
b. $3\frac{9}{10}$
- 13. Ari, Cindy, Beth
- 14. 60 pieces of chicken
 $9\frac{1}{6}$ lb of deli meat
 $26\frac{7}{8}$ lb of lasagna

Lesson 7-1 Constant Speed

- 1. 64 miles
- 2. 2 miles
- 3. 454 miles per hour
- 4. 46 miles per hour
- 5. 6 hours
- 6. 30 minutes
- 7. a. Answers will vary.
b. B
- 8. C
- 9. 6 hours
- 10. a. 3 miles
b. D
- 11. 2.3 kilometers per hour
- 12. a. Answers will vary.
b. B
- 13. A
- 14. 24 miles per hour
- 15. Peter: 41 miles per hour
Carin: 46 miles per hour
- 16. A
- 17. C
- 18. 30 meters
- 19. a. 10 hours
b. B

Lesson 7-2 Constant of Proportionality

- 1. 5
- 2. 13
- 3. 13 wins per loss
- 4. Yes; 18
- 5. a. 420 miles per hour
b. 11 hours
- 6. a. 19 millimeters per DVD
b. 247 mm
- 7. a. 10 calories per minute
b. A
- 8. a. 9.5
b. 43
c. Answers will vary.
- 9. a. B
b. 19 feet per townhouse
c. 171 feet
- 10. a. C
b. 50
c. 650
- 11. a. 18
b. C
- 12. a. \$7.25 per quart
b. A

Lesson 7-3 Proportional Relationships and Equations

- 1. $\frac{5}{7}$
- 2. 12 feet
- 3. $y = 8x$
- 4. \$26.25
- 5. $y = 2.05x$
- 6. 319 calories
- 7. $t = 77$
- 8. 60 grams
- 9. a. 8 ounces
b. Answers will vary.

- 10. a. 266 miles
b. Answers will vary.
- 11. a. 6.41
b. Answers will vary.
- 12. a. B
b. $x = 21$
c. Answers will vary.
- 13. a. $\frac{28}{5}$ or $5\frac{3}{5}$
b. D
- 14. \$33
- 15. a. B, C
b. 450 mL
- 16. a. A, D
b. $y = 14x$
- 17. a. 16 milliliters per second
b. $y = 16x$
- 18. a. $22\frac{2}{3}$ miles
b. 40 miles

Lesson 7-4

Maps and Scale Drawings

- 1. 40 mi
- 2. 15 ft
- 3. 220 m²
- 4. a. length: 10.8 in.
width: 7.2 in.
b. Answers will vary.
- 5. a. $\frac{5}{2}$
b. 50
c. 25
- 6. a. C
b. 16.8
c. 14.4
- 7. a. 8 ft
b. A
c. Answers will vary.
- 8. a. C, F
b. 585 mi
- 9. 36 feet
- 10. 400 miles

- 11. a. $9\frac{3}{4}$ km
b. $16\frac{1}{4}$ km
- 12. \$420.00

Lesson 7-5

Similar Shapes

- 1. Corresponding angles: $\angle Q$ and $\angle N$,
 $\angle R$ and $\angle O$, $\angle S$ and $\angle P$;
 $\frac{QR}{NO} = \frac{RS}{OP} = \frac{SQ}{PN}$
- 2. $\frac{2}{5}$
- 3. $x = 18$ m
- 4. a. $m\angle B = 27^\circ$, $m\angle C = 66^\circ$
 $m\angle X = 87^\circ$, $m\angle Z = 66^\circ$
b. Stay the same; answers may vary.
- 5. LG
- 6. a. 10
b. A
- 7. a. $\frac{3}{5}$
b. The ratio will be multiplied by $\frac{1}{2}$,
or divided by 2; answers will vary.
- 8. 66 yd
- 9. a. 28 ft
b. 126 ft
- 10. II, III
- 11. a. $\frac{9}{7}$
b. 14

Lesson 7-6

Additional Problem Solving

- 1. You map
- 2. $y = x + \frac{8}{9}$; no; answers will vary.
- 3. 290 cones
- 4. a. $y = \frac{15}{8}x$
b. yes
c. $28\frac{1}{8}$ oz flour
- 5. Yes; answers will vary.
- 6. 1 can
- 7. a. 96 km
b. B

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8. a. $y = 58 - 5x$
 b. no
 c. 33°F
 d. A
9. a. C
 b. Brittney's
10. a. $y = 2.52x + 7.46$
 b. no
 c. \$22.58

Lesson 8-1 Rate of Change

1. -9
2. a. $-\frac{2}{3}$
 b. Answers will vary.
3. Pizzeria W
4. a. 5
 b. There are 5 items per minute at the end of the assembly line.
5. a. $y = -5x + 4$
 b. -5
 c.
- | | | | | | |
|---|---|----|----|-----|-----|
| x | 0 | 1 | 2 | 3 | 4 |
| y | 4 | -1 | -6 | -11 | -16 |
6. a. C
 b. 9
7. Answers will vary; $\frac{1}{3}$; answers will vary.
8. a. A
 b. 45 pages per hour
 c. 37 pages per hour
 d. Parker

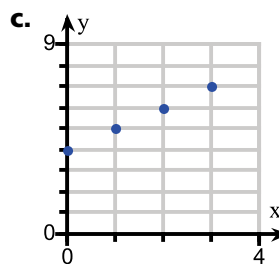
Lesson 8-2 Initial Value

1. 5
 2. A
 3. a. $-\frac{6}{7}$
 b. 6
 4. 70 m

5. a. 55°
 b. C
 c. Answers will vary.
 d. Answers will vary.
6. a. Commutative Property
 b. 70 ft
 c. The starting height of the elevator.
7. a. -3
 b. $\frac{4}{5}$
 c. Answers will vary.
8. 8 feet per second
9. a. $\frac{7}{6}$; 2
 b. Answers will vary.
10. a. C
 b. D
11. Answers will vary.
12. a. -\$199
 b. The starting amount in the savings account.
 c. Answers will vary.
 d. Answers will vary.
 e. Answers will vary.

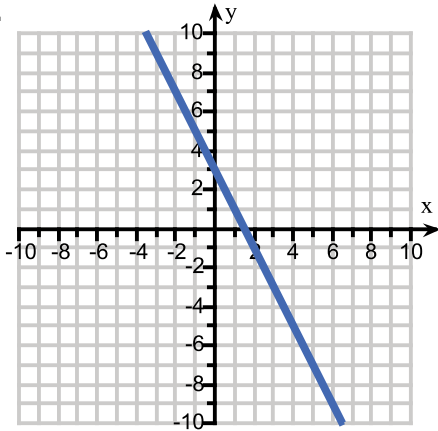
Lesson 8-3 Representing Linear Relationships

1. a. 5; (1, 5)
 6; (2, 6)
 7; (3, 7)
 b. $y = x + 4$



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2.



3. B

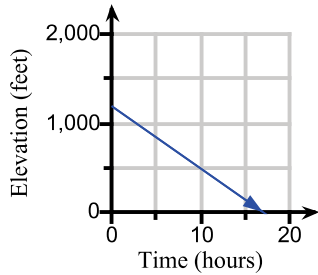
4. a. 950; (3, 950)

870; (4, 870)

390; (10, 390)

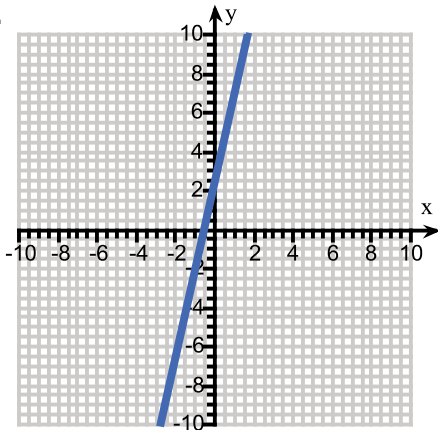
b. $y = -80x + 1,190$

c. Robot's Descent



d. 15 hours

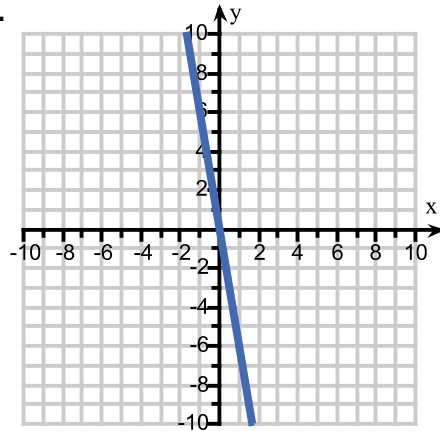
5.



6. a. Answers will vary.

b. $y = 5x$

7.



8. a. $y = 3.25x + 302.75$

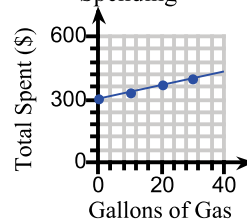
b. 302.75

335.25

367.75

400.25

c. Spending



9. a. Addition

b. Division

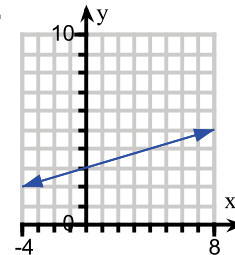
c. $y = \frac{x}{4} + 3$

d. 3; (0, 3)

4; (4, 4)

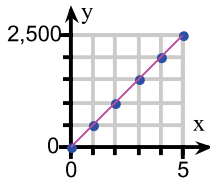
5; (8, 5)

e.

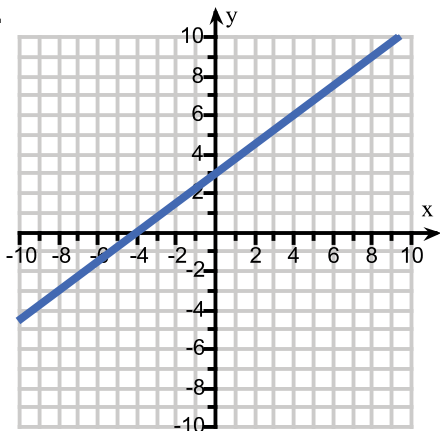


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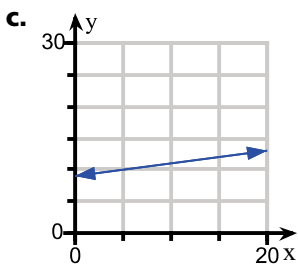
10. a. A
 b. 500; 1,000; 2,000; 2,500
 c. C
 d.



11.



12. a. 10; (5, 10)
 11; (10, 11)
 12; (15, 12)
 b. $y = \frac{1}{5}x + 9$



13. a. $y = \frac{2}{5}x - 2$
 b. B

Lesson 8-4 Additional Problem Solving

1. a. $y = 27x + 10$
 b. 8
 2. a. C
 b. 180 minutes
 3. a. $y = 3x + 8$
 b. A

4. a. $y = 150x + 75$
 b. 3
 c. Answers will vary. Check students' work.
 5. a. $y = 0.25x + 6$
 b. 24
 6. a. $y = 25x$
 b. 80
 c. 28
 d. Bill only counted the candles Sean sold. He forgot to include the candles he sold himself.
 7. a. $S = 20w + 75$
 b. \$35
 c. C
 8. a. $C = 3n - 20$
 b. \$49
 c. $C = -11$
 d. D
 9. a. $y = 240 - 60x$
 b. C
 10. a. $y = 0.1x + 5$
 b. $y = 0.25x + 4$
 c. Phone 1

Lesson 9-1 The Percent Equation

1. percent; 35 percent
 2. percent
 3. 25%
 4. 20%
 5. 48
 6. 800
 7. 30
 8. 120
 9. Whole

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- 10. a.** 18
b. Answers will vary.
c. Answers will vary.

- 11. a.** 14
b. C

- 12.** 55%

- 13. a.** B
b. 65%

- 14. a.** 456,000
b. Answers will vary.

- 15. a.** part
b. percent

- 16. a.** 25%
b. 5%

- 17. a.** B
b. 3

- 18. a.** D
b. 92%

- 19.** 3,500

- 20. a.** 4,600
b. Answers will vary.

Lesson 9-2

Using the Percent Equation

- 1. a.** \$1.60
b. \$41.60
- 2.** \$37.50
- 3.** \$10,250
- 4. a.** \$21.60
b. \$698.40
- 5.** \$9,500
- 6. a.** \$54
b. \$654
- 7.** \$21
- 8. a.** \$1,320
b. It would double; answers will vary.
- 9. a.** \$288
b. \$14,976
- 10. a.** A
b. A

- 11. a.** D
b. \$38.42

- 12. a.** 8%
b. Answers will vary.

- 13. a.** \$21,010
b. \$6,303

- 14. a.** \$21 per hour
b. B

- 15. a.** A
b. \$14.30

- 16.** \$12.99

Lesson 9-3

Simple Interest

- 1. a.** C
b. C
c. C
- 2.** A, B
- 3.** \$66.00 of simple interest earned
\$566.00 new account balance
- 4.** 8%
- 5. a.** \$720
b. \$6,720
- 6. a.** D
b. \$4,350
- 7.** B
- 8.** Mia
b. Answers will vary.
- 9. a.** \$2,500
b. Yes
- 10.** 6 years
- 11.** B
- 12. a.** B
b. 4%
- 13.** A

Lesson 9-4

Compound Interest

- 1.** \$17.36 of compound interest
\$364.65 final balance
- 2.** B

- 3. \$13,536
- 4. \$37,300
- 5. a. \$6,350
b. \$1,350
- 6. a. \$739.50
b. \$739.50
c. C
- 7. a. \$544
b. Answers will vary.
- 8. \$1,946
- 9. \$700
- 10. a. \$180
b. C
- 11. a. A
b. \$37,989
- 12. D
- 13. a. A
b. \$5,698
- 14. \$109,100
- 15. a. \$22,260
b. \$22,280
c. \$22,280

Lesson 9-5 Percent Increase and Decrease

- 1. 30%
- 2. 20%
- 3. 40%
- 4. 30%
- 5. a. C
b. percent decrease
- 6. D
- 7. C
- 8. D
- 9. a. 100%
b. Answers will vary.
- 10. 8%
- 11. a. B
b. 28%
- 12. a. 75%
b. B

- 13. a. 18.2%
b. Answers will vary.
- 14. a. A
b. 40%
- 15. a. B
b. Answers will vary.
- 16. a. 25%
b. 42%
- 17. a. 75% increase
b. Answers will vary.
- 18. a. 10%
b. \$2,985

Lesson 9-6 Markups and Markdowns

- 1. 30%
- 2. \$28
- 3. \$14,000
- 4. 5%
- 5. \$240
- 6. \$630.80
- 7. \$135
- 8. \$336
- 9. a. \$30
b. D
- 10. \$465.60
- 11. a. \$761.60
b. D
- 12. a. \$270
b. Answers will vary.
- 13. a. \$325
b. \$364
c. Answers will vary.
- 14. a. \$6
b. 21%
- 15. 25%
- 16. a. B
b. 14%

- 17. a. 20%
 - b. 30%
 - c. The percent markdown for the diamond ring is less than the percent markdown for the ruby ring.
18. \$600
19. \$455

Lesson 9-7 Additional Problem Solving

- 1. a. \$4.00
 - b. 48%
2. 225
3. He will pay \$23.10.
- 4. a. \$2.00
 - b. 12%
 - c. Answers will vary.
5. 13
- 6. a. 84
 - b. less
7. a. \$554.40
- b. C
8. a. \$25.08
- b. No
9. 78%
10. a. \$7.42
- b. 7%
 - c. \$340.26
11. a. \$1,904
- b. \$29,104
 - c. Yes
12. a. C
- b. \$3.50
13. a. 300
- b. Answers will vary.
14. a. \$1.40
- b. \$36.40
 - c. Yes
15. a. \$576
- b. B