

1 Chapter Test

Check It Out
Test Practice
BigIdeasMath.com

Find the absolute value.

1. $|-9|$

2. $|64|$

3. $|-22|$

Copy and complete the statement using $<$, $>$, or $=$.

4. 4 $|-8|$

5. $|-7|$ -12

6. -7 $|3|$

Evaluate the expression.

7. $-6 + (-11)$

8. $2 - (-9)$

9. $-9 \cdot 2$

10. $-72 \div (-3)$

Evaluate the expression when $x = 5$, $y = -3$, and $z = -2$.

11. $\frac{y+z}{x}$

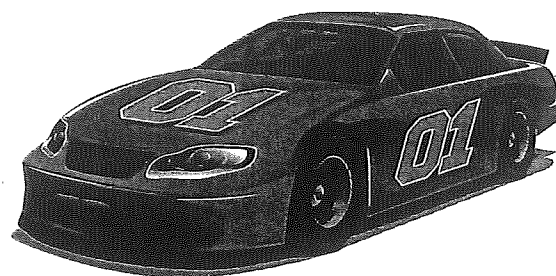
12. $\frac{x-5z}{y}$

Find the mean of the integers.

13. $11, -7, -14, 10, -5$

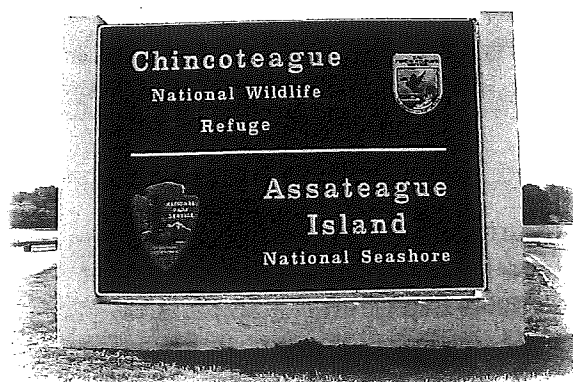
14. $-32, -41, -39, -27, -33, -44$

15. **NASCAR** A driver receives -25 points for each rule violation. What integer represents the change in points after 4 rule violations?



16. **GOLF** The table shows your scores, relative to *par*, for nine holes of golf. What is your total score for the nine holes?

Hole	1	2	3	4	5	6	7	8	9	Total
Score	+1	-2	-1	0	-1	+3	-1	-3	+1	?



17. **VISITORS** In a recent 10-year period, the change in the number of visitors to U.S. national parks was about $-11,150,000$ visitors.

- What was the mean yearly change in the number of visitors?
- During the seventh year, the change in the number of visitors was about $10,800,000$. Explain how the change for the 10-year period can be negative.

Answers

1. 9
2. 64
3. 22
4. $4 < |-8|$
5. $|-7| > -12$
6. $-7 < |3|$
7. -17
8. 11
9. -18
10. 24
11. -1
12. -5
13. -1
14. -36
15. -100
16. -3
17. a. -1,115,000 visitors
b. During other years, there were more significant changes in visitors in the negative direction.

2 Chapter Test

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Write the rational number as a decimal.

1. $\frac{7}{40}$

2. $-\frac{1}{9}$

3. $-\frac{21}{16}$

4. $\frac{36}{5}$

Write the decimal as a fraction or a mixed number in simplest form.

5. -0.122

6. 0.33

7. -4.45

8. -7.09

Add or subtract. Write fractions in simplest form.

9. $-\frac{4}{9} + \left(-\frac{23}{18}\right)$

10. $\frac{17}{12} - \left(-\frac{1}{8}\right)$

11. $9.2 + (-2.8)$

12. $2.86 - 12.1$

Multiply or divide. Write fractions in simplest form.

13. $3\frac{9}{10} \times \left(-\frac{8}{3}\right)$

14. $-1\frac{5}{6} \div 4\frac{1}{6}$

15. $-4.4 \times (-6.02)$

16. $-5 \div 1.5$

17. $-\frac{3}{5} \cdot \left(2\frac{2}{7}\right) \cdot \left(-3\frac{3}{4}\right)$

18. $-6 \cdot (-0.05) \cdot (-0.4)$

19. **ALMONDS** How many 2.25-pound containers can you make with 24.75 pounds of almonds?

20. **FISH** The elevation of a fish is -27 feet.

- The fish decreases its elevation by 32 feet, and then increases its elevation by 14 feet. What is its new elevation?
- Your elevation is $\frac{2}{5}$ of the fish's new elevation. What is your elevation?

21. **RAINFALL** The table shows the rainfall (in inches) for three months compared to the yearly average. Is the total rainfall for the three-month period greater than or less than the yearly average? Explain.

November	December	January
-0.86	2.56	-1.24



22. **BANK ACCOUNTS** Bank Account A has \$750.92, and Bank Account B has \$675.44. Account A changes by $-\$216.38$, and Account B changes by $-\$168.49$. Which account has the greater balance? Explain.

Answers

1. 0.175
2. $-0.\overline{1}$
3. -1.3125
4. 7.2
5. $-\frac{61}{500}$
6. $\frac{33}{100}$
7. $-4\frac{9}{20}$
8. $-7\frac{9}{100}$
9. $-1\frac{13}{18}$
10. $1\frac{13}{24}$
11. 6.4
12. -9.24
13. $-10\frac{2}{5}$
14. $-\frac{11}{25}$
15. 26.488
16. $-3.\overline{3}$
17. $5\frac{1}{7}$
18. -0.12
19. 11 containers
20. a. -45 feet
b. -18 feet
21. greater than; The sum of the three months is 0.46.
22. Bank Account A; Bank Account A has \$534.54 while Bank Account B only has \$506.95.

3 Chapter Test

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Simplify the expression.

1. $8x - 5 + 2x$

3. $3(5 - 2n) + 9n$

2. $2.5w - 3y + 4w$

4. $\frac{5}{7}x + 15 - \frac{9}{14}x - 9$

Find the sum or difference.

5. $(3j + 11) + (8j - 7)$

7. $(2r - 13) - (-6r + 4)$

6. $\frac{3}{4}(8p + 12) + \frac{3}{8}(16p - 8)$

8. $-2.5(2s - 5) - 3(4.5s - 5.2)$

Factor out the coefficient of the variable.

9. $3n - 24$

10. $\frac{1}{2}q + \frac{5}{2}$

Solve the equation. Check your solution.

11. $7x = -3$

12. $2(x + 1) = -2$

13. $\frac{2}{9}g = -8$

14. $z + 14.5 = 5.4$

15. $-14 = 6c$

16. $\frac{2}{7}k - \frac{3}{8} = -\frac{19}{8}$

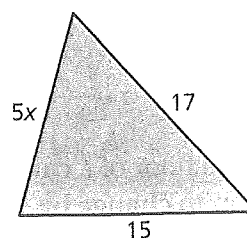
17. **HAIR SALON** Write an expression in simplest form that represents the income from w women and m men getting a haircut and a shampoo.

	Women	Men
Haircut	\$45	\$15
Shampoo	\$12	\$7

18. **RECORD** A runner is compared with the world record holder during a race. A negative number means the runner is ahead of the time of the world record holder. A positive number means that the runner is behind the time of the world record holder. The table shows the time difference between the runner and the world record holder for each lap. What time difference does the runner need for the fourth lap to match the world record?

Lap	Time Difference
1	-1.23
2	0.45
3	0.18
4	?

19. **GYMNASTICS** You lose 0.3 point for stepping out of bounds during a floor routine. Your final score is 9.124. Write and solve an equation to find your score before the penalty.
20. **PERIMETER** The perimeter of the triangle is 45. Find the value of x .



Answers

1. $10x - 5$
2. $6.5w - 3y$
3. $15 + 3n$
4. $\frac{1}{14}x + 6$
5. $11j + 4$
6. $12p + 6$
7. $8r - 17$
8. $-18.5s + 28.1$
9. $3(n - 8)$
10. $\frac{1}{2}(q + 5)$
11. $x = -\frac{3}{7}$
12. $x = -2$
13. $g = -36$
14. $z = -9.1$
15. $c = -2\frac{1}{3}$
16. $k = -7$
17. $57w + 22m$
18. 0.6
19. $x - 0.3 = 9.124; 9.424$
20. $2\frac{3}{5}$

4 Chapter Test

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Write the word sentence as an inequality.

1. A number k plus 19.5 is less than or equal to 40.
2. A number q multiplied by $\frac{1}{4}$ is greater than -16 .

Tell whether the given value is a solution of the inequality.

3. $n - 3 \leq 4$; $n = 7$
4. $-\frac{3}{7}m < 1$; $m = -7$
5. $-4c \geq 7$; $c = -2$
6. $-2.4m > -6.8$; $m = -3$

Solve the inequality. Graph the solution.

7. $w + 4 \leq 3$
8. $x - 4 > -6$
9. $-\frac{2}{9} + y \leq \frac{5}{9}$
10. $-6z \geq 36$
11. $-5.2 \geq \frac{p}{4}$
12. $4k - 8 \geq 20$
13. $\frac{4}{7} - b \geq -\frac{1}{7}$
14. $-0.6 > -0.3(d + 6)$

15. **GUMBALLS** You have \$2.50. Each gumball in a gumball machine costs \$0.25. Write and solve an inequality that represents the number of gumballs you can buy.

16. **PARTY** You can spend no more than \$100 on a party you are hosting. The cost per guest is \$8.
- a. Write and solve an inequality that represents the number of guests you can invite to the party.
 - b. What is the greatest number of guests that you can invite to the party? Explain your reasoning.



17. **BASEBALL CARDS** You have \$30 to buy baseball cards. Each pack of cards costs \$5. Write and solve an inequality that represents the number of packs of baseball cards you can buy and still have at least \$10 left.

Answers

1. $k + 19.5 \leq 40$

2. $\frac{1}{4}q > -16$

3. yes

4. no

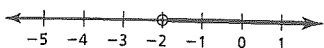
5. yes

6. yes

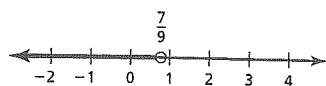
7. $w \leq -1$;



8. $x > -2$;



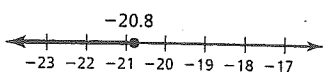
9. $y \leq \frac{7}{9}$;



10. $z \leq -6$;



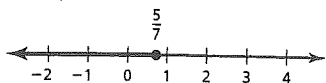
11. $p \leq -20.8$;



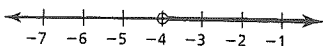
12. $k \geq 7$;



13. $b \leq \frac{5}{7}$;



14. $d > -4$;



15. $0.25g \leq 2.50$; $g \leq 10$ gumballs

16. a. $8g \leq 100$; $g \leq 12.5$

b. Twelve guests because 12 is the largest whole number that satisfies the inequality.

17. $30 - 5c \geq 10$; $c \leq 4$ packs of cards

5 Chapter Test

Check It Out
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Find the unit rate.

1. 84 miles in 12 days

2. $2\frac{2}{5}$ kilometers in $3\frac{3}{4}$ minutes

Tell whether the ratios form a proportion.

3. $\frac{1}{9}, \frac{6}{54}$

4. $\frac{9}{12}, \frac{8}{72}$

Use a graph to tell whether x and y are in a proportional relationship.

5.

x	2	4	6	8
y	10	20	30	40

6.

x	1	3	5	7
y	3	7	11	15

Use the table to write a proportion.

7.

	Monday	Tuesday
Gallons	6	8
Miles	180	m

8.

	Thursday	Friday
Classes	6	c
Hours	8	4

Solve the proportion.

9. $\frac{x}{8} = \frac{9}{4}$

10. $\frac{17}{3} = \frac{y}{6}$

Graph the line that passes through the two points. Then find the slope of the line.

11. (15, 9), (-5, -3)

12. (2, 9), (4, 18)

Tell whether x and y show direct variation. Explain your reasoning.

13. $xy - 11 = 5$

14. $x = \frac{3}{y}$

15. $\frac{y}{x} = 8$

16. **MOVIE TICKETS** Five movie tickets cost \$36.25. What is the cost of 8 movie tickets?

17. **CROSSWALK** The graph shows the number of cycles of a crosswalk signal during the day and during the night.

- Compare the steepness of the lines. What does this mean in the context of the problem?
- Find and interpret the slope of each line.

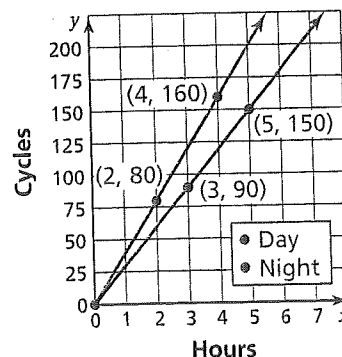


Don't Walk



Walk

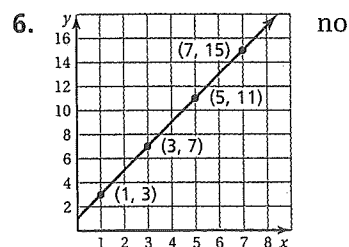
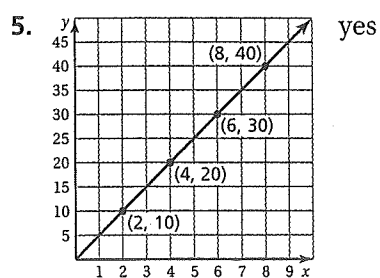
Crosswalk Signal



18. **GLAZE** A specific shade of green glaze requires 5 parts blue to 3 parts yellow. A glaze mixture contains 25 quarts of blue and 9 quarts of yellow. How can you fix the mixture to make the specific shade of green glaze?

Answers

1. 7 miles per day
2. $\frac{16}{25}$ kilometer per minute
3. yes
4. no



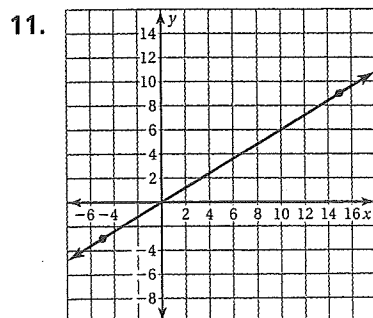
7. Sample answer:

$$\frac{8 \text{ gallons}}{6 \text{ gallons}} = \frac{m \text{ miles}}{180 \text{ miles}}$$

8. Sample answer:

$$\frac{6 \text{ classes}}{8 \text{ hours}} = \frac{c \text{ classes}}{4 \text{ hours}}$$

9. $x = 18$ 10. $y = 34$



$$\text{slope} = \frac{3}{5}$$

12–17. See Additional Answers.

18. Add 6 quarts of yellow

6 Chapter Test

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Write the percent as a decimal.

1. 0.96% 2. 65% 3. 25.7%

Write the decimal as a percent.

4. 0.42 5. 7.88 6. 0.5854

Tell which number is greater.

7. $\frac{16}{25}$, 65% 8. 56%, 5.6

Use a number line to order the numbers from least to greatest.

9. 85%, $\frac{15}{18}$, 0.84 10. 58.3%, 0.58, $\frac{7}{12}$

Answer the question.

11. What percent of 28 is 21? 12. 64 is what percent of 40?
13. What number is 80% of 45? 14. 0.8% of what number is 6?

Identify the percent of change as an *increase* or a *decrease*. Then find the percent of change. Round to the nearest tenth of a percent if necessary.

15. 4 strikeouts to 10 strikeouts 16. \$24 to \$18

Find the sale price or selling price.

17. Original price: \$15
Discount: 5%
Sale price: ? 18. Cost to store: \$5.50
Markup: 75%
Selling price: ?

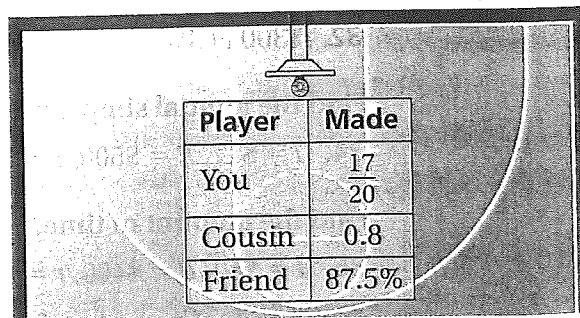
An account earns simple interest. Find the interest earned or the principal.

19. Interest earned: ?
Principal: \$450
Interest rate: 6%
Time: 8 years 20. Interest earned: \$27
Principal: ?
Interest rate: 1.5%
Time: 2 years

21. **BASKETBALL** You, your cousin, and a friend each take the same number of free throws at a basketball hoop. Who made the most free throws?
22. **PARKING LOT** You estimate that there are 66 cars in a parking lot. The actual number of cars is 75.

- a. Find the percent error.
b. What other estimate gives the same percent error? Explain your reasoning.

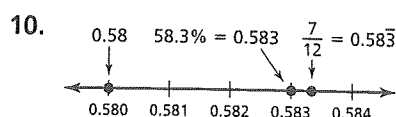
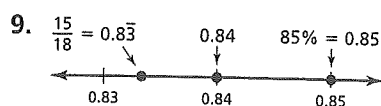
23. **INVESTMENT** You put \$800 in an account that earns 4% simple interest. Find the total amount in your account after each year for 3 years.



Player	Made
You	$\frac{17}{20}$
Cousin	0.8
Friend	87.5%

Answers

1. 0.0096
2. 0.65
3. 0.257
4. 42%
5. 788%
6. 58.54%
7. 65%
8. 5.6



11. 75%
12. 160%
13. 36
14. 750
15. increase; 150%
16. decrease; 25%
17. \$14.25
18. \$9.63
19. \$216
20. \$900
21. Your friend
22. a. 12%
 - b. 84 cars; To get the same percent error, the amount of error needs to be the same. Because your estimate was 9 cars below the actual number, an estimate of 9 cars above the actual number will give the same percent error.
23. Year 1: \$832
Year 2: \$864
Year 3: \$896

13 Chapter Test

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Find the slope and the y-intercept of the graph of the linear equation.

1. $y = 6x - 5$

2. $y = 20x + 15$

3. $y = -5x - 16$

4. $y - 1 = 3x + 8.4$

5. $y + 4.3 = 0.1x$

6. $-\frac{1}{2}x + 2y = 7$

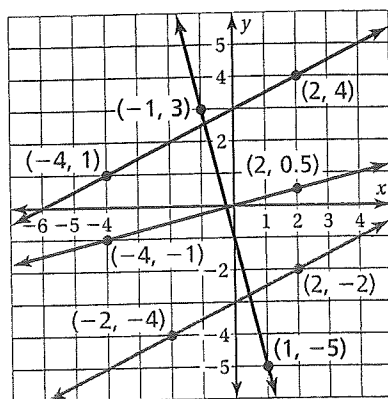
Graph the linear equation.

7. $y = 2x + 4$

8. $y = -\frac{1}{2}x - 5$

9. $-3x + 6y = 12$

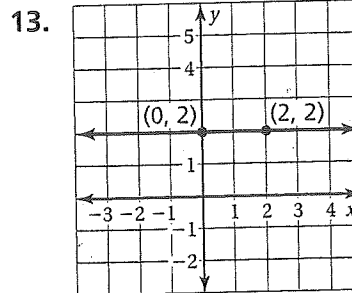
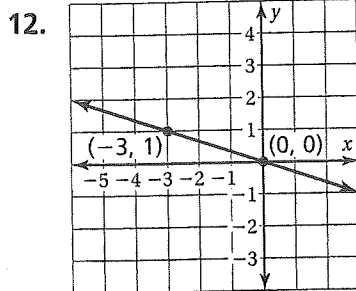
10. Which lines are parallel? Which lines are perpendicular? Explain.



11. The points in the table lie on a line. Find the slope of the line.

x	y
-1	-4
0	-1
1	2
2	5

Write an equation of the line in slope-intercept form.



Write in slope-intercept form an equation of the line that passes through the given points.

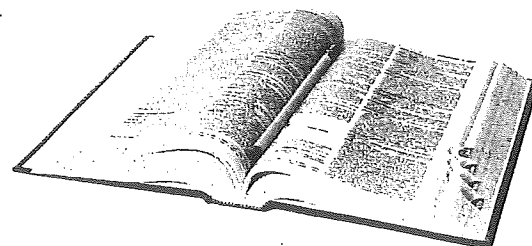
14. $(-1, 5), (3, -3)$

15. $(-4, 1), (4, 3)$

16. $(-2, 5), (-1, 1)$

17. **VOCABULARY** The number y of new vocabulary words that you learn after x weeks is represented by the equation $y = 15x$.

- Graph the equation and interpret the slope.
- How many new vocabulary words do you learn after 5 weeks?
- How many more vocabulary words do you learn after 6 weeks than after 4 weeks?



Answers

1. slope: 6; y-intercept: -5
2. slope: 20; y-intercept: 15
3. slope: -5 ; y-intercept: -16
4. slope: 3; y-intercept: 9.4
5. slope: 0.1; y-intercept: -4.3
6. slope: $\frac{1}{4}$; y-intercept: $\frac{7}{2}$
- 7–9. See Additional Answers.
10. The red and green lines are parallel. They both have a slope of $\frac{1}{2}$. The black and blue lines are perpendicular. The product of their slopes is -1 .

11. 3

12. $y = -\frac{1}{3}x$

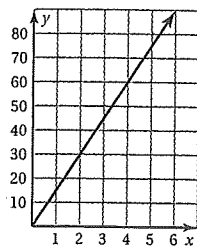
13. $y = 2$

14. $y = -2x + 3$

15. $y = \frac{1}{4}x + 2$

16. $y = -4x - 3$

17. a.



You learn 15 new vocabulary words per week.

b. 75 new vocabulary words

c. 30 more words