

Cold Spring Harbor High School



COLD SPRING HARBOR CENTRAL SCHOOL DISTRICT
82 TURKEY LANE
COLD SPRING HARBOR, NEW YORK 11724-1799
(631) 367-6900 -- FAX (631) 367-6836 -- www.csh.k12.ny.us

Jay H. Matuk
Principal
Helen T. Browne, Ph.D.
Assistant Principal
Joseph A. Monastero
Assistant Principal

June 2015

Dear Student,

Congratulations on your placement into Math 8 Accelerated. We are proud of you and excited to teach you Algebra next year. As you know, the students who take 8 Accelerated cover both the Math 8 curriculum as well as the New York State Algebra Common Core curriculum in one year.

To help with the transition from 7th grade math to Algebra, we have created this packet of material for you to work on over the summer. It is not required and will not be graded.

The math in this packet represents pre-requisite skills that you should have mastered before September. We suggest that you complete these sheets on a separate sheet of paper. Calculators can be used.

Have a great summer, work hard to complete your packet. See you in September.

A cursive signature of Christine Watt.

Christine Watt

A cursive signature of Dennis Bonn.

Dennis Bonn

Cold Spring Harbor Junior/Senior High School
Mathematics Department

Helen T. Browne, Ph.D.
Department Chair Math/Science

2F: Vocabulary Review

For use with Chapter Review

Study Skill To succeed in mathematics, you need to understand the language and the words. Learn the new math terms one at a time by drawing a diagram or by writing a sentence to make the meaning clear.

Match each word or phrase in the left column with the best example in the right column. Some words or phrases may have more than one example, but only one example is the best match.

Word or Phrase

1. Addition Property of Equality _____
2. Additive Identity _____
3. Associative Property _____
4. Commutative Property _____
5. Multiplicative Identity _____

Example or Definition

- A. $w + 0 = w$
- B. $n \cdot 1 = n$
- C. $(pq)r = p(qr)$
- D. If $a = c$, then $a + b = c + b$.
- E. $x \cdot y = y \cdot x$

Word or Phrase

6. constant _____
7. open sentence _____
8. equation _____
9. solution _____
10. term _____

Example or Definition

- A. $6 + 22 = 28$
- B. $13y$
- C. $17 + b = 47$
- D. 75
- E. When $x + 37 = 62$, $x = 25$.

1D: Visual Vocabulary Practice

For use after Lesson 1-10

Study Skill The Glossary contains the key vocabulary for this course.

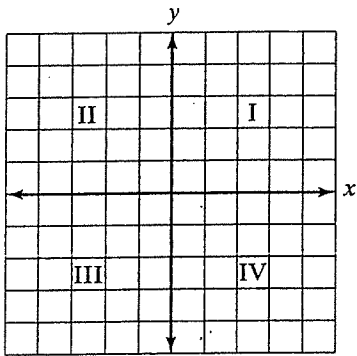
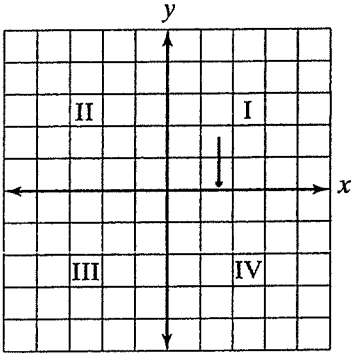
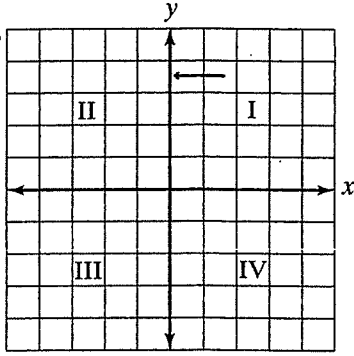
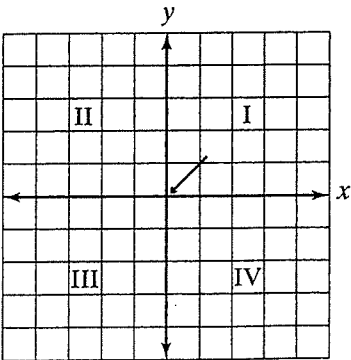
Concept List

opposites
quadrants
x-axis

ordered pair
variable
y-axis

origin
algebraic expression
y-coordinate

Write the concept that best describes each exercise. Choose from the concept list above.

1. The letter "c" in $24c + 8$ _____	2. $10d - 3 + a$ _____	3. -9 and 9 _____
4.  _____	5.  _____	6.  _____
7. $(2, -3)$ _____	8.  _____	9. The number 8 in $(5, 8)$ _____

2D: Visual Vocabulary Practice

For use after Lesson 2-5

Study Skill Mathematics builds on itself so build a strong foundation.

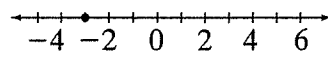
Concept List

coefficient
expression
open sentence

constant
graph
solution of equation

equation
inverse operations
terms

Write the concept that best describes each exercise. Choose from the concept list shown above.

1. $4x$ and 9 in $4x + 9$ _____	2.  _____	3. 9 in $2n - 6m + 9$ _____
4. The 3 and 6 in $3a + 6b - 10$ _____	5. The number 3 if $y + 19 = 22$ _____	6. $4c - 6 = c$ _____
7. $5(4 - 2) = 10$ _____	8. addition and subtraction _____	9. $-8x + 6xy + 7y$ _____

4F: Vocabulary Review

For use with Chapter Review

Study Skill Many words in English have more than one meaning. You can often figure out which meaning to use by looking at the sentence that contains the word. To help you decide what a word means, consider the surroundings, or context, in which you see the word.

Match each word or phrase in the left column with the best example in the right column. Some words or phrases may have more than one example, but only one example is the best match.

Word or Phrase	Example
1. exponent _____	A. the 5 in 5^2
2. base _____	B. 4.06×10^3
3. factors _____	C. $\frac{3}{4} = \frac{6}{8}$
4. scientific notation _____	D. both the 3 and the 5 in $3 \cdot 5$
5. standard notation _____	E. 4,060
6. prime factorization _____	F. the 2 in 5^2
7. equivalent fractions _____	G. $60 = 2 \cdot 2 \cdot 3 \cdot 5$

Word or Phrase	Example
8. formula _____	A. the 4 in $4x$
9. dividend _____	B. the $5x$ in $5x - 2$
10. like terms _____	C. 10 in $10 \div 5 = 2$
11. coefficient _____	D. $3x$ and $7x$
12. term _____	E. 11
13. prime number _____	F. $P = 2l + 2w$
14. rational number _____	G. $\frac{2}{3}$

7D: Visual Vocabulary Practice

For use after Lesson 7-6

Study Skill One way to check if you understand something is to try to explain it to someone else.

Concept List

area formula

inequality

distance formula

Distributive Property

least common multiple

two-step inequality

consecutive integers

perimeter formula

variable

Write the concept that best describes each exercise. Choose from the concept list above.

1. 181, 182, 183 _____	2. $3(b + 4) = 3b + 12$ _____	3. $A = lw$ _____
4. $P = 2l + 2w$ _____	5. $3x + 4 \geq -2$ _____	6. $d = rt$ _____
7. a in $3a - 4 = 5$ _____	8. 20 for the numbers 5 and 4 _____	9. $5c \geq 2b + 9$ _____

8D: Visual Vocabulary Practice

For use after Lesson 8-7

Study Skill When learning about a new concept, try to draw a picture to illustrate it.

Concept List

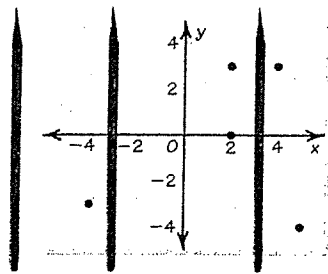
constant of variation
relation
slope

linear equation
direct variation
slope-intercept form

linear inequality
vertical-line test
system of linear equations

Write the concept that best describes each exercise. Choose from the concept list shown above.

1. $y = 2x + 1$



2. $\frac{\text{rise}}{\text{run}}$

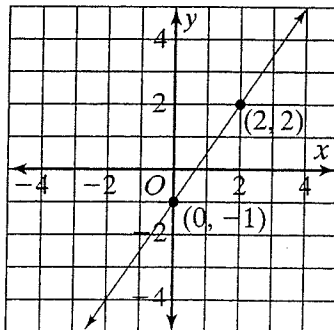
3. $y = mx + b$

4. $(0, 1), (1, 2), (2, 3)$

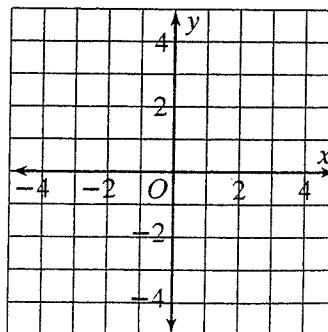
5. k in $y = kx$

6. $y = kx$

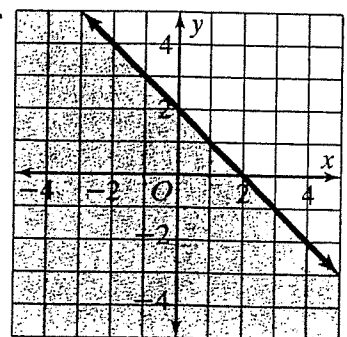
7.



8. $y = x, y = 2x + 3$



9.



Practice 1-1**Variables and Expressions****Write an expression for each quantity.**

1. the value in cents of 5 quarters _____
2. the value in cents of q quarters _____
3. the number of months in 7 years _____
4. the number of months in y years _____
5. the number of gallons in 21 quarts _____
6. the number of gallons in q quarts _____

Write an algebraic expression for each word phrase.

- | | |
|--|--|
| 7. 9 less than k
_____ | 8. m divided by 6
_____ |
| 9. twice x
_____ | 10. 4 more than twice x
_____ |
| 11. the sum of eighteen and b
_____ | 12. three times the quantity 2 plus a
_____ |

Tell whether each expression is a numerical expression or an algebraic expression. For an algebraic expression, name the variable.

- | | |
|----------------------------|---------------------------|
| 13. $4d$ _____ | 14. $74 + 8$ _____ |
| 15. $\frac{4(9)}{6}$ _____ | 16. $14 - p$ _____ |
| 17. $5k - 9$ _____ | 18. $3 + 3 + 3 + 3$ _____ |
| 19. $19 + 3(12)$ _____ | 20. $25 - 9 + x$ _____ |

Write an expression for each quantity.

21. the number of hours in 5 days

22. the number of weeks in d days

Practice 4-2**Exponents****Evaluate each expression.**

1. m^4 , for $m = 5$ _____
2. $(5a)^3$, for $a = -1$ _____
3. $-(2p)^2$, for $p = 7$ _____
4. $-n^6$, for $n = 2$ _____
5. b^6 , for $b = -1$ _____
6. $(e - 2)^3$, for $e = 11$ _____
7. $(6 + h^2)^2$, for $h = 3$ _____
8. $x^2 + 3x - 7$, for $x = -4$ _____
9. $y^3 - 2y^2 + 3y - 4$, for $y = 5$ _____

Write using exponents.

10. $3 \cdot 3 \cdot 3 \cdot 3$ _____
11. $k \cdot k \cdot k \cdot k \cdot k$ _____
12. $(-9)(-9)(-9)m \cdot m \cdot m$ _____
13. $g \cdot g \cdot g \cdot g \cdot h$ _____
14. $7 \cdot a \cdot a \cdot b \cdot b \cdot b$ _____
15. $-8 \cdot m \cdot n \cdot n \cdot 2 \cdot m \cdot m$ _____
16. $d \cdot (-3) \cdot e \cdot e \cdot d \cdot (-3) \cdot e$ _____

Simplify.

17. $(-2)^3$ and -2^3 _____
18. 0^{12} _____
19. 2^8 and 4^4 _____
20. $-5^2 + 4 \cdot 2^3$ _____
21. $3(8 - 6)^2$ _____
22. $-6^2 + 2 \cdot 3^2$ _____
23. $(-2)(-5)^2(3)$ _____
24. $24 + (11 - 3)^2 \div 4$ _____
25. $(17 - 3)^2 \div (4^2 - 3^2)$ _____
26. $(5 + 10)^2 \div 5^2$ _____
27. $4^3 \div (2^5 - 4^2)$ _____
28. $(-1)^5 \cdot (2^4 - 13)^2$ _____

Practice 4-7**Exponents and Multiplication****Complete each equation.**

1. $9^3 \cdot 9 \text{ — } = 9^7$

2. $6^8 \cdot 6 \text{ — } = 6^{17}$

3. $n \text{ — } \cdot n^5 = n^{15}$

4. $(a \text{ — })^8 = a^{24}$

5. $(c^4) \text{ — } = c^{12}$

6. $r \text{ — } \cdot r^{12} = r^{20}$

Simplify each expression.

7. $(z^3)^5$ _____

8. $-(m^4)^3$ _____

9. $(-3^2)^3$ _____

10. $(x^3)(x^4)$ _____

11. $y^4 \cdot y^5$ _____

12. $(-y^5)(y^2)$ _____

13. $(3y^2)(2y^3)$ _____

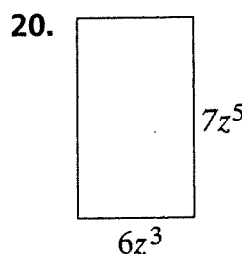
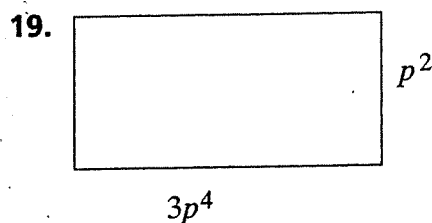
14. $3x^{12} \cdot 2x^3$ _____

15. $m^{30} \cdot m^{12}$ _____

16. $(x^4)(y^2)(x^2)$ _____

17. $(-6x^7)(-9x^{12})$ _____

18. $(h^4)^4$ _____

Find the area of each rectangle.**Compare. Use $>$, $<$, or $=$ to complete each statement.**

21. $(4^3)^2$ ☐ $(4^2)^3$

22. $5^3 \cdot 5^4$ ☐ 5^{10}

23. $(3^5)^4$ ☐ 3^{10}

24. 3^4 ☐ 9^2

25. $(9^7)^9$ ☐ $(9^8)^8$

26. $4^2 \cdot 4^3$ ☐ 4^5

27. $(6^2)^2$ ☐ $3^4 \cdot 2^4$

28. $5^2 \cdot 5^6$ ☐ 5^7

29. $(8^2)^2$ ☐ $(8^2)^3$

Practice 4-8

Exponents and Division

Complete each equation.

1. $\frac{8^n}{8^7} = 8^2$, $n =$ _____

2. $\frac{12x^5}{4x} = 3x^n$, $n =$ _____

3. $\frac{1}{h^5} = h^n$, $n =$ _____

4. $\frac{p^n}{p^8} = p^{-6}$, $n =$ _____

5. $\frac{1}{81} = 3^n$, $n =$ _____

6. $\frac{12^4}{12^n} = 1$, $n =$ _____

Simplify each expression.

7. $\frac{a^3}{a^7}$ _____

8. $\frac{j^5}{j^6}$ _____

9. $\frac{x^7}{x^7}$ _____

10. $\frac{k^5}{k^9}$ _____

11. $\frac{9x^8}{12x^5}$ _____

12. $\frac{2f^{10}}{f^5}$ _____

13. $\frac{3y^4}{6y^{-4}}$ _____

14. n^{-5} _____

15. $\frac{3xy^4}{9xy}$ _____

16. $(-15)^0$ _____

17. $\frac{15h^6k^3}{5hk^2}$ _____

18. $4b^{-6}$ _____

Write each expression without a fraction bar.

19. $\frac{a^7}{a^{10}}$ _____

20. $\frac{4x^2y}{2x^3}$ _____

21. $\frac{x^3y^4}{x^9y^2}$ _____

22. $\frac{12mn}{12m^3n^5}$ _____

23. $\frac{16s^2t^4}{8s^5t^3}$ _____

24. $\frac{21e^4f^2}{7e^2}$ _____

25. Write three different quotients that equal 4^{-5} .

Practice 5-9**Powers of Products and Quotients****Simplify each expression.**

1. $(\frac{5}{6})^2$ _____

2. $(-\frac{4}{9})^2$ _____

3. $(\frac{x^2}{5})^3$ _____

4. $(2x)^3$ _____

5. $(-3y^2)^2$ _____

6. $(5ab^2)^3$ _____

7. $(12mn)^2$ _____

8. $(-10xy^3)^3$ _____

9. $(9qrs^4)^3$ _____

10. $(\frac{2x}{9y})^2$ _____

11. $-(a^2b^2)^3$ _____

12. $(2a^3b^2)^4$ _____

13. $(\frac{2x}{y})^2$ _____

14. $(-\frac{3x}{8y})^2$ _____

15. $(\frac{3y^2}{x})^3$ _____

16. $(\frac{2x^2y}{xy^3})^5$ _____

Evaluate for $a = 2$, $b = -1$, and $c = \frac{1}{3}$.

17. $(a^2)^3$ _____

18. $2b^3$ _____

19. $(-9c^2)^3$ _____

20. $(a^2b)^2$ _____

21. $(ac)^2$ _____

22. $(b^3)^7$ _____

Complete each equation.

23. $(3b \text{ _____})^2 = 9b^{10}$

24. $(m^2n) \text{ _____} = m^8n^4$

25. $(xy \text{ _____})^2 = x^2y^6$

26. $(\frac{3s^2t}{r}) \text{ _____} = \frac{9s^4t^2}{r^2}$

27. Write an expression for the area of a square with a side of length $4a^2$.
Simplify your expression.
_____28. Write an expression for the volume of a cube with a side of length $3z^5$.
Simplify your expression.

Practice 2-9

Solving One-Step Inequalities by Adding or Subtracting

Write an inequality for each sentence. Then solve the inequality.

- Six less than n is less than -4 .

- The sum of a number k and five is greater than or equal to two.

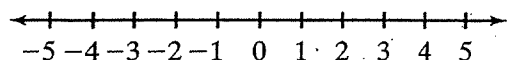
- Nine more than a number b is greater than negative three.

- You must be at least 48 inches tall to ride an amusement park ride, and your little sister is 39 inches tall. How many inches i must she grow before she may ride the ride?

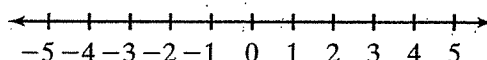
- You need no more than 3,000 calories in a day. You consumed 840 calories at breakfast and 1,150 calories at lunch. How many calories c can you eat for dinner?

Solve each inequality. Graph the solutions.

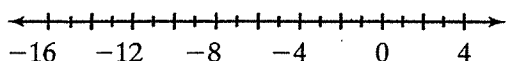
6. $7 + x \geq 9$ _____



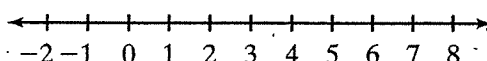
7. $-5 \leq x - 6$ _____



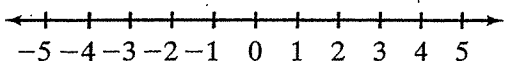
8. $0 \geq x + 12$ _____



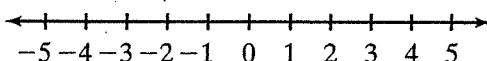
9. $x - 15 \leq -8$ _____



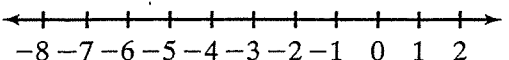
10. $13 + x \geq 13$ _____



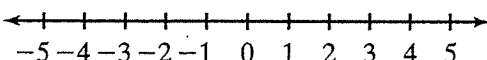
11. $x - 8 > -5$ _____



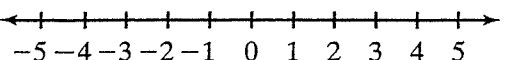
12. $4 + x < -2$ _____



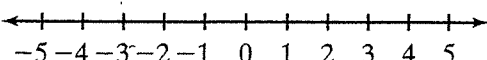
13. $x - 9 > -11$ _____



14. $x - 6 \leq -1$ _____



15. $-4 + x < -4$ _____



Practice 5-7**Solving Equations by Adding or Subtracting Fractions****Solve and check each equation.**

1. $m - \left(-\frac{7}{10}\right) = -1\frac{1}{5}$ _____

2. $k - \frac{3}{4} = \frac{2}{5}$ _____

3. $x - \frac{5}{6} = \frac{1}{10}$ _____

4. $t - \left(-3\frac{1}{6}\right) = 7\frac{2}{3}$ _____

5. $x + \frac{5}{8} = \frac{7}{8}$ _____

6. $k + \frac{4}{5} = 1\frac{3}{5}$ _____

7. $4 = \frac{4}{9} + y$ _____

8. $h + \left(-\frac{5}{8}\right) = -\frac{5}{12}$ _____

9. $n + \frac{2}{3} = \frac{1}{9}$ _____

10. $e - \frac{11}{16} = \frac{7}{8}$ _____

11. $w - 14\frac{1}{12} = -2\frac{3}{4}$ _____

12. $v + \left(-4\frac{5}{6}\right) = 2\frac{1}{3}$ _____

13. $a - 9\frac{1}{6} = -3\frac{19}{24}$ _____

14. $f + \left|-3\frac{11}{12}\right| = 18$ _____

15. $z + \left(-3\frac{2}{5}\right) = -4\frac{1}{10}$ _____

16. $x - \frac{7}{15} = \frac{7}{60}$ _____

17. $h - \left(-6\frac{1}{2}\right) = 14\frac{1}{4}$ _____

18. $p - 5\frac{3}{8} = -\frac{11}{24}$ _____

Solve each equation using mental math.

19. $x + \frac{3}{7} = \frac{5}{7}$ _____

20. $k - \frac{8}{9} = -\frac{1}{9}$ _____

21. $a + \frac{1}{9} = \frac{3}{9}$ _____

22. $g - \frac{4}{5} = -\frac{2}{5}$ _____

Write an equation to solve each problem.

23. Pete's papaya tree grew $3\frac{7}{12}$ ft during the year. If its height at the end of the year was $21\frac{1}{6}$ ft, what was its height at the beginning of the year?
- _____

24. Lee is $1\frac{3}{4}$ ft taller than Jay. If Lee is $6\frac{1}{4}$ ft tall, how tall is Jay?
- _____

Practice 5-8**Solving Equations by Multiplying Fractions****Solve each equation.**

1. $\frac{3}{4}x = \frac{9}{16}$ _____

2. $-\frac{1}{3}p = \frac{1}{4}$ _____

3. $-\frac{3}{8}k = \frac{1}{2}$ _____

4. $\frac{1}{8}h = \frac{1}{10}$ _____

5. $2\frac{2}{3}e = \frac{1}{18}$ _____

6. $-1\frac{2}{7}m = 6$ _____

7. $-\frac{1}{4}p = \frac{1}{18}$ _____

8. $\frac{11}{12}w = -1$ _____

9. $-3\frac{4}{7}x = 0$ _____

10. $\frac{2}{3}m = 2\frac{2}{9}$ _____

11. $5c = \frac{2}{3}$ _____

12. $-8k = \frac{4}{5}$ _____

13. $\frac{4}{7}y = 4$ _____

14. $2\frac{1}{4}f = \frac{6}{5}$ _____

15. $\frac{10}{11}n = \frac{2}{11}$ _____

16. $\frac{7}{8}c = \frac{7}{6}$ _____

Solve each equation using mental math.

17. $7d = 42$ _____

18. $\frac{1}{4}y = 5$ _____

19. $-3h = \frac{3}{8}$ _____

20. $\frac{1}{5}k = -\frac{1}{3}$ _____

Write an equation to solve each problem.

21. It takes Nancy $1\frac{2}{3}$ min to read 1 page in her social studies book. It took her $22\frac{1}{2}$ min to complete her reading assignment. How long was the assignment? Let m represent the number of pages she read.
- _____

22. It takes Gary three hours to drive to Boston. If the trip is 156 miles, what is Gary's average number of miles per hour? Let x represent the miles per hour.
- _____

Practice 7-3**Two-Step Equations With Fractions and Decimals****Solve and check each equation.**

1. $0.7n - 1.5 + 7.3n = 14.5$

2. $18p - 45 = 0$

3. $16.3k + 19.2 + 7.5k = -64.1$

4. $h + 3h + 4h = 100$

5. $40 - 5n = -2$

6. $14 = \frac{2}{3}(9y - 15)$

7. $\frac{2}{3}y - 6 = 2$

8. $1.2m + 7.5m + 2.1 = 63$

9. $\frac{7}{8}h - \frac{5}{8} = 2$

10. $93.96 = 4.7p + 8.7p - 2.6p$

11. $9w - 16.3 = 5.3$

12. $88.1 - 2.3f = 72.46$

13. $-15.3 = -7.5k + 55.2$

14. $26e + 891 = -71$

15. $2.3(x + 1.4) = -9.66$

16. $(x - 17.7) + 19.6 = 27.8$

Write an equation to describe each situation. Solve.

17. Jolene bought 3 blouses at one price and 2 blouses priced \$3 below the others. The total cost was \$91.50. Find the prices of the blouses.
-
- _____

18. A car rented for \$29 per day plus \$.08 per mile. Julia paid \$46.12 for a one-day rental. How far did she drive?
-
- _____

By what number would you multiply each equation to clear denominators or decimals? Do not solve.

19. $\frac{1}{3}z + \frac{1}{6} = 5\frac{1}{6}$

20. $3.7 + 2.75k = 27.35$

NAME: _____

P.I. A.A.25: Solve equations involving fractional expressions

Solve:

1. $15 = -\frac{1}{2}(-12x + 2)$

- [A] $\frac{3}{8}$ [B] $\frac{8}{3}$ [C] $\frac{7}{3}$ [D] $\frac{3}{7}$

2. $12 = \frac{1}{9}(36x + 18)$

- [A] $\frac{7}{2}$ [B] $\frac{2}{5}$ [C] $\frac{2}{7}$ [D] $\frac{5}{2}$

3. Solve for x : $\frac{x-8}{7} = \frac{7}{10}$

- [A] $-\frac{31}{10}$ [B] $\frac{129}{10}$ [C] $\frac{10}{129}$ [D] 129

4. Solve: $\frac{5}{8}y - 8 = 2$

- [A] 15 [B] $6\frac{1}{4}$ [C] 16 [D] $-9\frac{3}{5}$

5. Solve for x : $\frac{x+1}{6} = \frac{4}{5}$

- [A] $\frac{19}{5}$ [B] $\frac{29}{5}$ [C] $\frac{5}{19}$ [D] 19

Solve:

6. $\frac{6}{5}y - 4 = 8$

- [A] $14\frac{2}{5}$ [B] 8 [C] $3\frac{1}{3}$ [D] 10

7. $\frac{x}{2} + \frac{x}{9} = 3$

NAME: _____

Solve:

8. $\frac{x}{2} + \frac{x}{6} = 2$

9. $-\frac{1}{4}(-16x - 8) = 18$

10. $0 = \frac{8}{12}y - 40$

11. $-\frac{1}{3}(-9x - 3) = 17$

12. $\frac{x}{2} + \frac{x}{4} = 6$

13. $0 = \frac{3}{18}y + 12$

14. $0 = \frac{6}{17}y - 36$

15. $\frac{1}{6}(36x + 12) = 10$

16. $\frac{x}{2} + \frac{x}{8} = 8$

17. $-\frac{1}{5}(-25x + 15) = 20$

[1] B

[2] D

[3] B

[4] C

[5] A

[6] D

[7] $\frac{54}{11}$ _____

[8] 3

[9] 4

[10] 60

[11] $\frac{16}{3}$ _____

[12] 8

[13] -72

[14] 102

[15] $\frac{4}{3}$ _____

[16] $\frac{64}{5}$ _____

[17] $\frac{23}{5}$ _____

Practice 8-2

Equations With Two Variables

Solve each equation for y .

1. $3y = 15x - 12$

$y =$ _____

2. $5x + 10 = 10y$

$y =$ _____

3. $3y - 21 = 12x$

$y =$ _____

4. $5y + 3 = 2y - 3x + 5$

$y =$ _____

5. $-2(x + 3y) = 18$

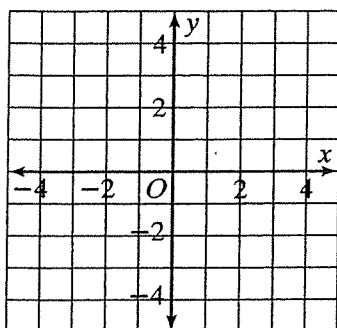
$y =$ _____

6. $5(x + y) = 20 + 3x$

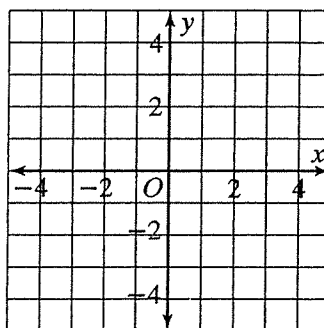
$y =$ _____

Graph each linear equation.

7. $y = -0.5x + 4$

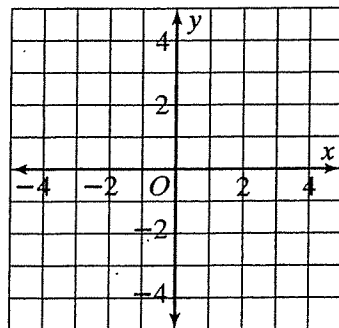


8. $y = 4$



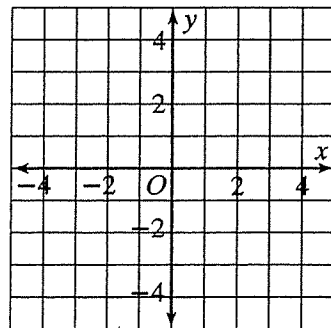
9. $2x - 3y = 6$

$y =$ _____



10. $-10x = 5y$

$y =$ _____



Find the solution of $y = 3x - 4$ for the given value of x .

11. 3

12. -2

13. 0

14. 5

15. -4

16. -1

Answers to Summer Packet

2F: Vocabulary Review

1. D 2. A 3. C 4. E 5. B 6. D 7. C 8. A 9. E 10. B

1D: Visual Vocabulary Practice

1. variable 2. algebraic expression 3. opposites
4. quadrants 5. x-axis 6. y-axis 7. ordered pair
8. y-coordinate 9. origin

2D: Visual Vocabulary Practice

1. terms 2. solution of inequality 3. constant 4. coefficient
5. solution of equation 6. open sentence 7. equation
8. inverse operations 9. expression

4D: Visual Vocabulary Practice

1. exponent 2. base 3. greatest common divisor
4. prime numbers 5. simplest form 6. equivalent fractions
7. rational number 8. standard notation 9. scientific notation

4F: Vocabulary Review

1. F 2. A 3. D 4. B 5. E 6. G 7. C 8. F 9. C 10. D

7D: Visual Vocabulary Practice

1. consecutive integers 2. Distributive Property 3. area formula
4. perimeter formula 5. two-step inequality
6. distance formula 7. variable 8. least common multiple
9. inequality

8D: Visual Vocabulary Practice

1. vertical-line test 2. slope 3. slope-intercept form
4. relation 5. constant of variation 6. direct variation
7. linear equation 8. system of linear equations
9. linear equality

Practice 1-1

1. $25(5)$ 2. $25q$ 3. $12(7)$ 4. $12y$ 5. $\frac{21}{4}$
6. $\frac{q}{4}$ 7. $k - 9$ 8. $\frac{m}{6}$ 9. $2x$ 10. $2x + 4$
11. $18 + b$ 12. $3(2 + a)$ 13. algebraic; d
14. numerical 15. numerical 16. algebraic; p
17. algebraic; k 18. numerical 19. numerical
20. algebraic; x 21. $24 \cdot 5$ 22. $\frac{d}{7}$

Practice 4-2

1. 625 2. -125 3. -196 4. -64 5. 1
6. 729 7. 225 8. -3 9. 86 10. 3^4 11. k^5
12. $(-9)^3 m^3$ 13. $g^4 h$ 14. $7a^2 b^3$ 15. $-16m^3 n^2$
16. $(-3)^2 d^2 e^3$ 17. -8; -8 18. 0 19. 256; 256
20. 7 21. 12 22. -18 23. -150 24. 40
25. 28 26. 9 27. 4 28. -9

Practice 4-7

1. 4 2. 9 3. 10 4. 3 5. 3 6. 8 7. z^{15}
8. $-m^{12}$ 9. -3^6 10. x^7 11. y^9 12. $-y^7$
13. $6y^5$ 14. $6x^{15}$ 15. m^{42} 16. $x^6 y^2$ 17. $54x^{19}$
18. h^{16} 19. $3p^6$ 20. $42z^8$ 21. = 22. < 23. >
24. = 25. < 26. = 27. = 28. > 29. <

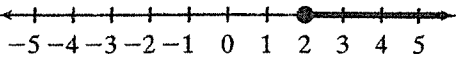
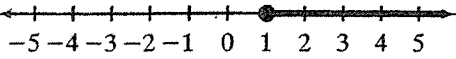
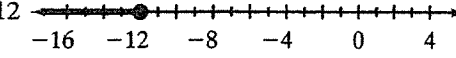
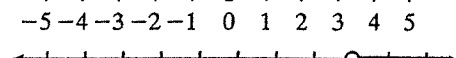
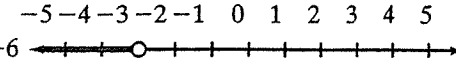
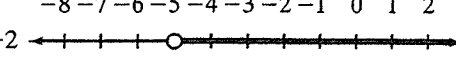
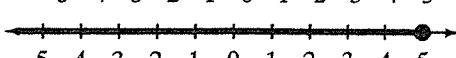
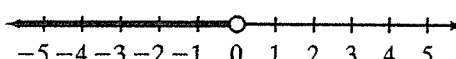
Practice 4-8

1. 9 2. 4 3. -5 4. 2 5. -4 6. 4 7. $\frac{1}{a^4}$
8. $\frac{1}{j}$ 9. 1 10. $\frac{1}{k^4}$ 11. $\frac{3x^3}{4}$ 12. $2f^5$ 13. $\frac{y^8}{2}$
14. $\frac{1}{n^5}$ 15. $\frac{y^3}{3}$ 16. 1 17. $3h^5 k$ 18. $\frac{4}{b^6}$
19. a^{-3} 20. $2x^{-1}y$ 21. $x^{-6}y^2$ 22. $m^{-2}n^{-4}$
23. $2s^{-3}t$ 24. $3e^2 f^2$ 25. Answers may vary. $\frac{1}{4^5}, \frac{4^2}{4^7}, \frac{4^{-4}}{4}$

Practice 5-9

1. $\frac{25}{36}$ 2. $\frac{16}{81}$ 3. $\frac{x^6}{125}$ 4. $8x^3$ 5. $9y^4$ 6. $125a^3 b^6$
7. $144m^2 n^2$ 8. $-1,000x^3 y^9$ 9. $729q^3 r^3 s^{12}$
10. $\frac{4x^2}{81y^2}$ 11. $-a^6 b^6$ 12. $16h^{12} b^8$ 13. $\frac{4x^2}{y^2}$
14. $\frac{9x^2}{64y^2}$ 15. $\frac{27y^6}{x^3}$ 16. $\frac{32x^5}{y^{10}}$ 17. 64 18. -2
19. -1 20. 16 21. $\frac{4}{9}$ 22. -1 23. 5 24. 4
25. 3 26. 2 27. $(4a^2)^2 = 16a^4$
28. $(3z^5)^3 = 27z^{15}$

Practice 2-9

1. $n - 6 < -4; n < 2$ 2. $k + 5 \geq 2; k \geq -3$
3. $b + 9 > -3; b > -12$ 4. $39 + i \geq 48; i \geq 9$
5. $840 + 1,150 + c \leq 3,000; c \leq 1,010$
6. $x \geq 2$ 
7. $x \geq 1$ 
8. $x \leq -12$ 
9. $x \leq 7$ 
10. $x \geq 0$ 
11. $x > 3$ 
12. $x < -6$ 
13. $x > -2$ 
14. $x \leq 5$ 
15. $x < 0$ 

Practice 5-7

1. $-1\frac{9}{10}$ 2. $1\frac{3}{20}$ 3. $\frac{14}{15}$ 4. $4\frac{1}{2}$ 5. $\frac{1}{4}$ 6. $\frac{4}{3}$ 7. $3\frac{5}{9}$
8. $\frac{5}{24}$ 9. $-\frac{5}{9}$ 10. $-\frac{3}{16}$ 11. $11\frac{1}{3}$ 12. $7\frac{1}{6}$ 13. $5\frac{3}{8}$
14. $14\frac{1}{12}$ 15. $-\frac{7}{10}$ 16. $\frac{7}{12}$ 17. $7\frac{3}{4}$ 18. $4\frac{11}{12}$
19. $\frac{2}{9}$ 20. $\frac{7}{9}$ 21. $\frac{2}{9}$ 22. $\frac{2}{5}$ 23. $h + 3\frac{7}{12} = 21\frac{1}{6}$
 $h = 17\frac{7}{12}$ ft 24. $h + 1\frac{3}{4} = 6\frac{1}{4}; h = 4\frac{1}{2}$ ft

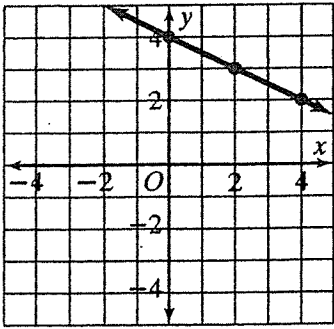
Practice 5-8

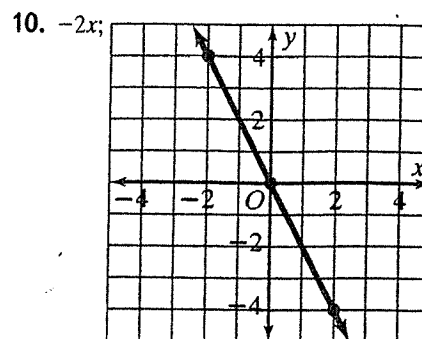
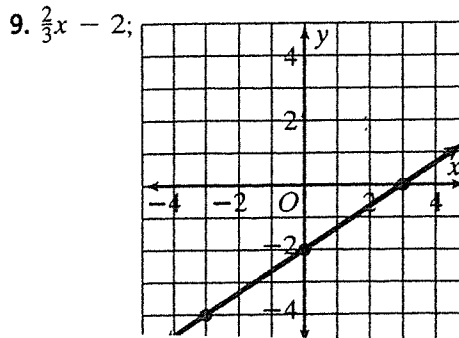
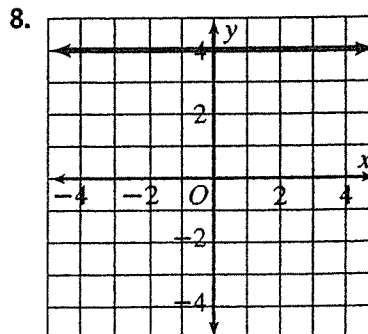
1. $x = \frac{3}{4}$ 2. $p = -\frac{3}{4}$ 3. $k = -1\frac{1}{3}$ 4. $h = \frac{4}{3}$
5. $e = \frac{1}{48}$ 6. $m = -4\frac{2}{3}$ 7. $p = -\frac{2}{9}$ 8. $w = 1\frac{1}{11}$
9. $x = 0$ 10. $m = 3\frac{1}{3}$ 11. $c = \frac{2}{15}$ 12. $k = -\frac{1}{10}$
13. $y = 7$ 14. $f = \frac{8}{15}$ 15. $n = \frac{1}{5}$ 16. $c = 1\frac{1}{3}$
17. $d = 6$ 18. $y = 20$ 19. $h = -\frac{1}{8}$
20. $k = -1\frac{2}{3}$ 21. $1\frac{2}{3}m = 22\frac{1}{2}; m = 13\frac{1}{2}$ pages
22. $3x = 156; x = 52$ mi/h

Practice 7-3

1. $n = 2$ 2. $p = 2.5$ 3. $k = -3.5$
4. $h = 12\frac{1}{2}$ 5. $n = 8.4$ 6. $y = 4$ 7. $y = 12$
8. $m = 7$ 9. $h = 3$ 10. $p = 8.7$ 11. $w = 2.4$
12. $f = 6.8$ 13. $k = 9.4$ 14. $e = -37$
15. $x = -5.6$ 16. $x = 25.9$
17. $3x + 2(x - 3) = 91.50; \$19.50$ and $\$16.50$
18. $29 + 0.08m = 46.12; m = 214$ miles
19. 6 20. 100

Practice 8-2

1. $5x - 4$ 2. $\frac{1}{2}x + 1$ 3. $4x + 7$ 4. $-x + \frac{2}{3}$
5. $-\frac{1}{3}x - 3$ 6. $-\frac{2}{5}x + 4$
7. 



11. $y = 5$ 12. $y = -10$ 13. $y = -4$ 14. $y = 11$
15. $y = -16$ 16. $y = -7$