

Semester Review

Algebra S1

Part 1. Solving Equations

Solve for x.

1. $-7 - 4x = x + 19$

2. $-2 = \sqrt{x+1} - 7$

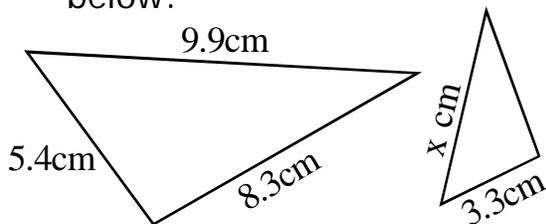
3. $-6 = \frac{2x - 8}{5}$

4. $-2|x - 5| \geq -16$ (graph your answer)

Part 2. Proportional Reasoning

Solve:

1. Find the missing length x in the similar triangles below:



2. What percent is 9 of 25?

3. What number increased by 15% is 92?

Part 3. Linear Equations

Solve:

1. State the slope between: $(-1, -9)(4, -2)$
2. State the x and y intercepts: $2x - 5y = 20$
3. Write an equation for a line perpendicular to $y = 2x - 3$

Which passes through the point $(-6, 1)$ in Standard Form.

Semester Review

Algebra S1

Part 4. Exponents

Simplify

1. $3x^3y(5x^{-2}y)$

2. $(2a^{-4}b)^3$

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

4. $\left(\frac{a^2b^{-3}}{a^5b^{-7}}\right)^2$

Part 5. Systems of Equations

Solve Each Using Substitution or Elimination:

1. Solve for x and y: $y = 2x - 5$

$$2x + 3y = -7$$

2. Solve for x and y: $3x - 2y = 16$

$$2x + 3y = 2$$

3. Jamie has a cup full of quarters and dimes. She has a total of 17 coins, for a total of \$3.05. How many of each coin does she have?

4. Eddie is mixing two types of candy. Runts cost \$5 a pound, and caramels cost \$4 a pound. If he mixes 8 pounds worth \$4.25 a pound, how much of each candy did he use?

Practice Semester Exam 1

Algebra S1

Solve for x:

1. $a(x-b) = c$

1. _____

2. $\frac{4x+7}{-2} \leq 5$

2. _____

3. $|x+5| = 3$

3. _____ or _____

4. $3|2x-5| - 9 = 3$

4. _____ or _____

Solve:

5. What number decreased by 30% is 28?

5. _____

6. The price of a stereo was \$229.99, and you paid \$250.69 at the register. What percent was the sales tax?

6. _____

What are the x and y-intercepts for the line described below?7. Slope: $-\frac{3}{4}$ Through the point: $(-2, 5)$

7. x-int. _____ y-int. _____

Write an equation in slope-intercept form for a line passing through:8. $(-3, -1)$ and $(6, -4)$

8. _____

Practice Semester Exam 1

Algebra S

Find the point where the lines below intersect:

$$9. \quad \begin{aligned} y &= 3x - 5 \\ 3x + y &= 2 \end{aligned}$$

9. _____

Solve each system of equations below:

$$10. \quad \begin{aligned} 2x - 3y &= 16 \\ 4x + y &= 18 \end{aligned}$$

10. _____

$$11. \quad \begin{aligned} x &= 3y + 20 \\ x - y &= 6 \end{aligned}$$

11. _____

Solve:

12. A Ligon student is raising money for a fund raiser. She sells Blow Pops for \$0.25 each and candy bars for \$0.75 each. She has sold 21 items for a total of \$14.25. How many of each has she sold?

$$12. \quad \mathbf{B}(\text{Blow Pops}) = \underline{\hspace{2cm}} \quad \mathbf{C}(\text{Candy bars}) = \underline{\hspace{2cm}}$$

Simplify:

$$13. \quad 3x^2y(-2x^{-5}y^{-3})^2$$

13. _____

$$14. \quad \frac{3xy(x^7y^{-1})}{5x^2y^{-3}}$$

14. _____

$$15. \quad \left(\frac{2a^4}{a^{-2}} \right)^3$$

15. _____

Pledge: Write-out and sign.

Practice Semester Exam 2

Algebra S2

Solve for x:

1. $\frac{a(x-c)}{d} = b$

1. _____

2. $\frac{-2(x-7)}{3} = \frac{5}{6}$

2. _____

3. $2\sqrt{x-5} + 7 = 12$

3. _____

4. $-3|3x-5| = -18$

4. _____ or _____

Solve:

5. What number increased by 30% is 52?

5. _____

6. A stereo is on sale for 10% off, and now costs just \$143.10. What was the original price of the stereo before the sale?

6. _____

What is the slope of the line below?

7. $3x - 2y = 7$

7. m = _____

Find the x and y-intercepts for a line passing through the points below:

8. $(-3, -1)(6, -4)$

8. x-int. _____ y-int. _____

Practice Semester Exam 2

Algebra S2

Write an equation for a line perpendicular to the line below and passing through the point given in Standard Form:

9. Perpendicular to $2x - 3y = -5$ through $(-4, 2)$

9. Standard Form _____

Solve each system of equations below:

10. $2x - 3y = 5$
 $4x + y = -11$

10. _____

11. $x = 3y + 8$
 $x - y = 6$

11. _____

Solve:

12. Juan buys six Blow Pops and three candy bars for \$4.05. The next day, he buys seven Blow Pops and two candy bars for \$3.75. How much will he pay for five Blow Pops and four candy bars?

12. 5 Blow Pops and 4 candy bars = _____

Simplify:

13. $(-2xy^3)^3$

13. _____

14. $\frac{3x^{-2}y(x^7y)^2}{12x^2y}$

14. _____

15. $\left(\frac{2x^3y}{x^5}\right)^{-3}$

15. _____

Practice Semester Exam 3

Algebra S3

Solve for x:

1. $a(b + dx) = c$

1. _____

2. $\frac{3x}{5} = \frac{2x-3}{7}$

2. _____

3. $\frac{\sqrt{x-3}}{2} = 5$

3. _____

4. $-2|x-1| + 7 = -1$

4. _____ or _____

Solve:

5. 14% more than what number is 9.12?

5. _____

6. Amanda has 25% more money than Claire. If Amanda has \$123, how much money does Claire have?

6. _____

What is the slope of a line parallel to the line of the equation below?

7. $x = 2y + 3$

7. $m =$ _____**The graph of the line passing through the two points below is shifted UP three units. What is the y-intercept of the resulting graph?**

8. $(4, -2)(-3, 12)$

8. y-int. _____

Practice Semester Exam 3

Algebra S3

Write an equation for a line perpendicular to the line below and passing through the point given in Slope-Intercept Form:

9. Perpendicular to $6x + 5y = 18$ through $(12, 11)$

9. Slope-Intercept Form _____

Solve each system of equations below:

10. $y = x - 8$
 $3x - 2y = 1$

10. _____

11. $2x - 5y = -3$
 $2x + 5y = 10$

11. _____

Solve:

12. A test consists of true/false questions and fill-in-the-blank questions. There are 24 questions on the test. If the true/false questions are worth three points each and the fill-in-the-blank questions are worth seven points each for a total of 100 points, how many of the questions are fill-in-the blank questions?

12. fill-in-the-blank questions = _____

Simplify:

13. $-3y(2y^{-2})^4$

13. _____

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

14. _____

15. $\left(\frac{5x^{-4}}{10x^{-7}}\right)^3$

15. _____

Review: Four Formulas

Algebra Re

Find the slope between each pair of points:

1. $(-4, -3)$ $(5, -7)$

2. $(9, -1)$ $(-2, 0)$

3. $(6, -7)$ $(-3, -7)$

4. $(-8, 4)$ $(-8, -10)$

Write an equation for each pair of points below in Point-Slope Form, then convert it into both Standard and Slope-Intercept Forms:

5. $(1, -1)$ $(6, -11)$

6. $(5, -3)$ $(-2, 4)$

Point-Slope: _____

Point-Slope: _____

Standard: _____

Standard: _____

Slope-Intercept: _____

Slope-Intercept: _____

Write an equation parallel to the given equation and through the point given:

Write an equation perpendicular to the given equation and through the point given:

7. $2x - 3y = 8$ $(-3, -7)$

8. $y = 5x - 7$ $(-5, 7)$

Point-Slope: _____

Point-Slope: _____

Standard: _____

Standard: _____

Slope-Intercept: _____

Slope-Intercept: _____

Review: Four Formulas

Algebra Re

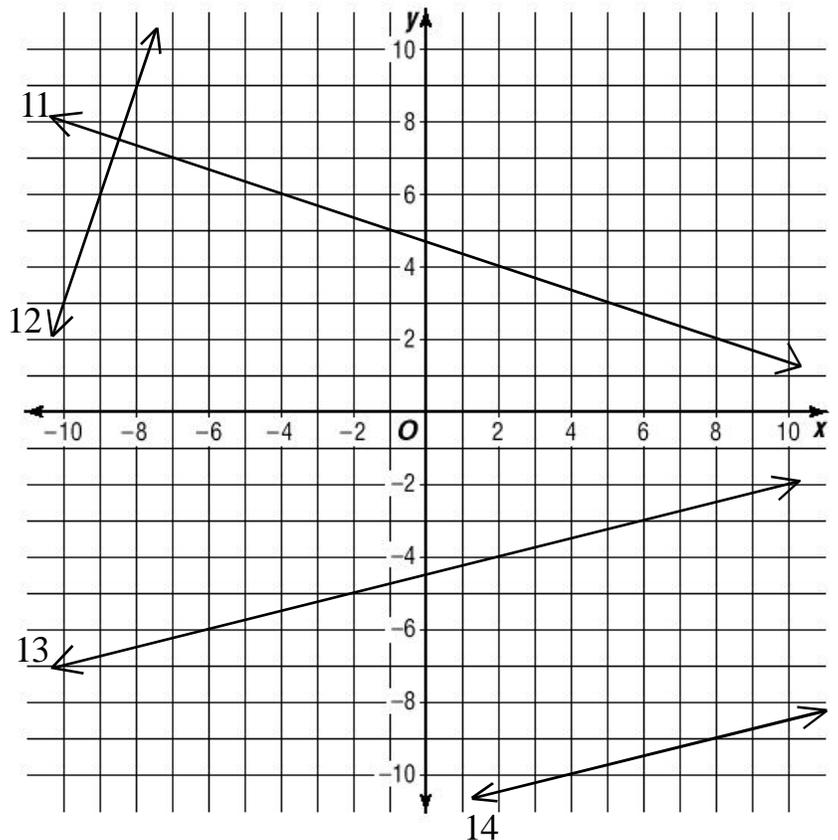
Write an equation for each in the form listed:

9. Standard

10. Slope-Intercept

11. Standard

12. Point-Slope



Name both Intercepts for each equation:

13. $2x - 5y = 40$

x-int.: _____

y-int. _____

14. $7x - 3y = 10$

x-int.: _____

y-int. _____

\

15. $x + 15 = 5y$

x-int.: _____

y-int. _____

16. $y = 2x - 5$

x-int.: _____

y-int. _____

Practice Semester Exam 4

Algebra S4

Solve:

1. A pair of sunglasses costs \$29.95 but is on sale for 15% off. After a 7.5% sales tax, how much will the sunglasses cost? (to the cent)

1. _____

2. Ryan can run a quarter mile 15% *faster* than his sister Ally. If Ryan can run a quarter mile in 68 seconds, how many seconds does it take Ally?

2. _____

3. Write an equation in Standard Form for a line with a slope of $-\frac{7}{9}$ and a y-intercept of -5:

3. _____

The line which passes through the two points below is shifted to the right 5 units. What is the new x-intercept of the graph?

4. $(4, -6)(-3, -20)$

4. x-int. _____

Solve for x:

5. $a(b - x) = c$

5. _____

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

6. _____

7. $\sqrt{-4x + 5} = 2$

7. _____

Solve for x and graph your solution on the line provided:

8. $-2x + 7 \leq -1$

8. _____

Practice Semester Exam 4

Algebra S4

Write an equation for a line parallel to the line below and passing through the point given in Slope-Intercept Form:

9. Parallel to $x = 5y - 1$ through $(-2, -10)$

9. Slope-Intercept Form _____

Simplify:

10. $5xy(-2y^2x)^3$

10. _____

11. $\frac{a^{-2}b(5a^3)^2}{10b^{-3}}$

11. _____

12. $\left(\frac{20x^{-2}y}{8x^7}\right)^2$

12. _____

Solve:

13. Marianna makes \$6.50 an hour as a lifeguard and \$7.50 an hour as a cashier during the summer. In one week she works for 19 hours and makes \$132.50. How many hours did she work as a cashier?

13. hours as a cashier = _____

Solve each system of equations below:

14. $x = -5y + 11$
 $2x + 11y = 20$

14. _____

15. $2x - 3y = 14$
 $6x + y = 12$

15. _____

Bonus: Circle the equation that does NOT represent a function:

a. $y - x = -3$ b. $y = -3x$ c. $x = y^2 + 3$ d. $y = -3x^2$