

**Pre-Course
ASSIGNMENT
Accelerated Geometry
2025-26**

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Student Pre-course (Summer) Assignment 2025-2026

Accelerated Geometry

Hello folks.

My name is Mr. Dolly and I will be your Accelerated Geometry teacher next year.

The pre-course assignment is **required work** for all students entering accelerated courses at Gettysburg Area High School. Accelerated packets cover material you have already learned in previous courses and emphasize skills necessary to be successful in this course.

The packet must be completed and turned in the **first day** of class for each semester.

(**August** for **Fall** semester students, **January** for **Spring** semester students.) *Note: Fall semester students should work throughout June and July to finish the packet, and shoot me some questions in August to make sure you have it in tip-top shape before school starts. Spring semester students will receive their packets during the course of the fall since it draws heavily on material from Algebra 1B.*

Instructions:

Print out (or disassemble) the packet, **work out** the problems in the worksheet space or on blocks provided. **Write** your name on the top and staple the packet together in order.

All work must be shown to receive full credit.

Along with the Pre-course assignment, you will be taking a quiz on the material within the first week of class. I will combine those scores to form your ***Pre-Course Assignment grade***.

I check my email regularly, so contact me if you have any questions or difficulty accessing materials over the summer or fall. I will do my best to straighten them out.

Happy Mathing!



Email: jdolly@gasd-pa.org

Accelerated Geometry Pre-Course Packet

<i>Topic</i>	<i>Problems</i>
<u><i>Solving Equations and Inequalities</i></u>	
- Multistep Equations	1-12
- Absolute Value Inequalities	1-6, 21, 22
<u><i>Writing Linear Equations</i></u>	
- Point-Slope form	1-6, 10-15, 19-24
- Slope-Intercept form	1-15
<u><i>Graphing Linear Equations</i></u>	
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- Slope-Intercept method	7-12
<u><i>Polynomials</i></u>	
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Solving Multi-step Equations

Solve each equation, showing all steps.

1. $2(x + 3) + 4 = 3x - 1$

2. $5x - 2(x - 4) = 3x + 10$

3. $\frac{1}{2}(4x - 6) = x + 1$

4. $4(x - 2) + 3 = 2x + 9$

5. $7x + 3 = 2(x + 4) + 5x$

6. $0.4x + 2.4 = 0.2x + 3.6$

7. $3(x - 5) = 2(x + 1) + x$

8. $6x - 4 = 3(x + 2) + x$

9. $\frac{2}{3}x + 4 = \frac{1}{2}x + 6$

10. $4(x - 1) - 2 = 3x + 5$

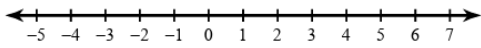
11. $2(3x + 4) = 5x + 10$

12. $\frac{3}{4}(x - 2) = \frac{1}{2}x + 1$

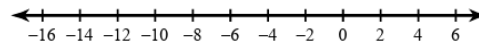
Solving Absolute Value Inequalities

Solve each inequality and graph the solution on the number line.

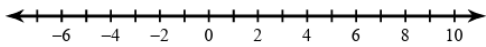
1) $|-8n| < 32$



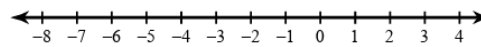
2) $|x + 5| < 9$



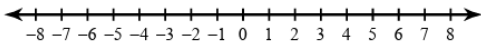
3) $|4v - 9| \leq 27$



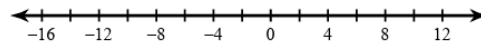
4) $|10 + 4x| < 14$



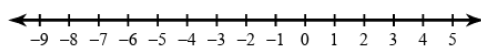
5) $|3 - 9a| \leq 60$



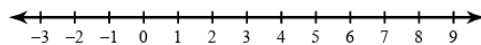
6) $|7x + 4| \geq 74$



21) $\frac{|2 + 3x|}{2} \geq 5$



22) $8 + |4v - 7| \geq 17$



Writing Equations in Point-Slope Form

Write the point-slope form of an equation for each line passing through the given point and having the given slope.

1. $(4, 7), m = 3$

2. $(-2, 3), m = 5$

3. $(6, -1), m = -2$

4. $(-5, -2), m = 0$

5. $(-4, -6), m = \frac{2}{3}$

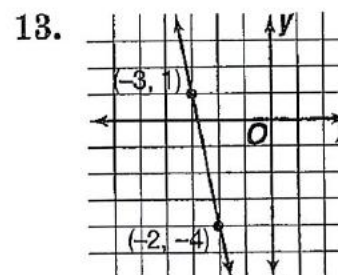
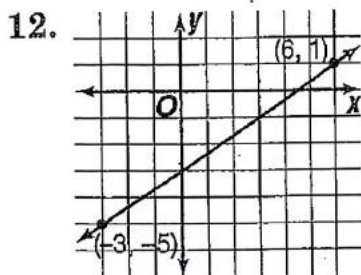
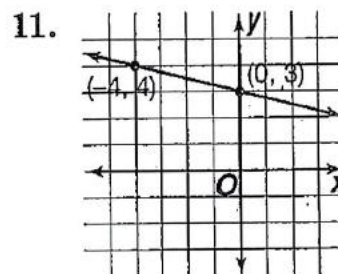
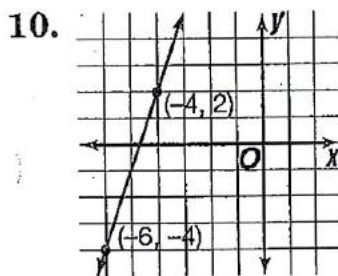
6. $(-8, 3), m = -\frac{3}{5}$

7. $(7, -9), m = 4$

8. $(-6, 3), m = -\frac{1}{2}$

9. $(-2, -5), m = 8$

Write the point-slope form of an equation for each line.



14. the line through points
at $(-2, -2)$ and $(-1, -6)$

15. the line through points
at $(-7, -3)$ and $(5, -1)$

Writing Equations in Slope-Intercept Form

Accelerated Geometry

Write an equation in slope-intercept form of the line with each slope and y-intercept.

1. $m = -3, b = 5$

2. $m = 6, b = 2$

3. $m = 4, b = -1$

4. $m = 0, b = 4$

5. $m = \frac{2}{5}, b = -7$

6. $m = -\frac{3}{4}, b = 8$

Write an equation in slope-intercept form of the line having the given slope and passing through the given point.

10. $m = 3, (4, 2)$

11. $m = -2, (-1, 3)$

12. $m = 4, (0, -7)$

13. $m = -\frac{3}{5}, (-5, -3)$

14. $m = \frac{1}{4}, (-8, 6)$

15. $m = -\frac{2}{3}, (9, -4)$

Writing Equations in Slope-Intercept Form

Write an equation in slope-intercept form of the line passing through each pair of points.

19. $(1, 3)$ and $(-3, -5)$

20. $(0, 5)$ and $(3, -4)$

21. $(2, 1)$ and $(3, 6)$

22. $(-3, 0)$ and $(6, -6)$

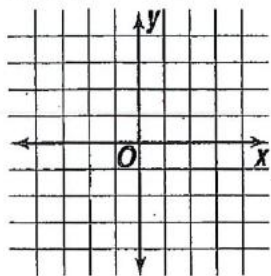
23. $(4, 5)$ and $(-5, 5)$

24. $(0, 6)$ and $(-4, 3)$

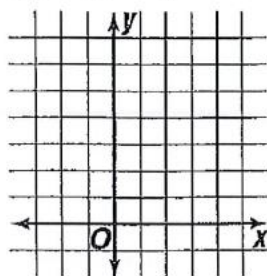
Graphing Linear Equations

Determine the x -intercept and y -intercept of the graph of each equation. Then graph the equation.

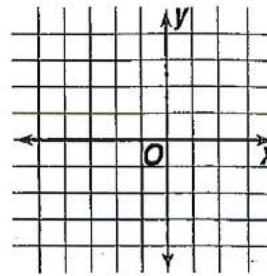
1. $x + y = -2$



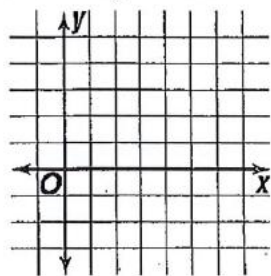
2. $2x + y = 6$



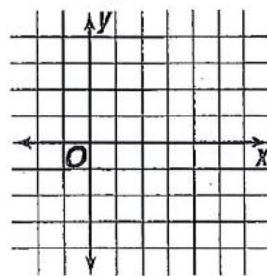
3. $x - 2y = -4$



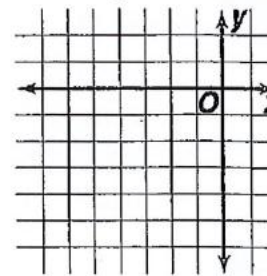
4. $2x + 3y = 12$



5. $3x - 3y = 9$

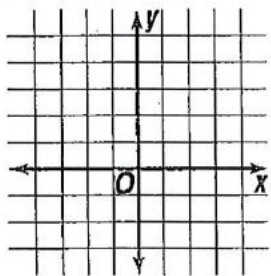


6. $5x + 6y = -30$

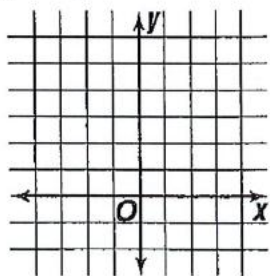


Determine the slope and y -intercept of the graph of each equation. Then graph the equation.

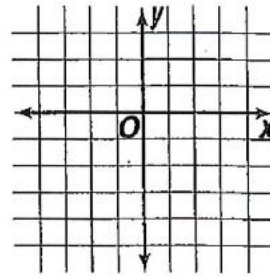
7. $y = -x + 3$



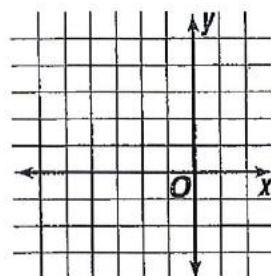
8. $y = 5$



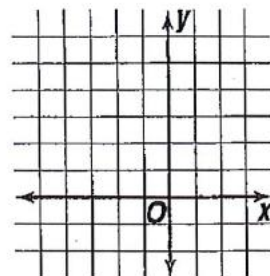
9. $y = 3x - 4$



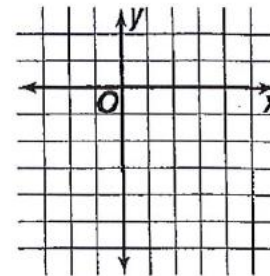
10. $y = \frac{2}{5}x + 2$



11. $y = -\frac{3}{4}x + 1$



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



Polynomials

Multiply Polynomials You use the distributive property when you multiply polynomials. When multiplying binomials, the **FOIL** pattern is helpful.

FOIL Pattern	To multiply two binomials, add the products of F the <i>first</i> terms, O the <i>outer</i> terms, I the <i>inner</i> terms, and L the <i>last</i> terms.
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Find each product.

1. $2x(3x^2 - 5)$

2. $7a(6 - 2a - a^2)$

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

4. $(x - 2)(x + 7)$

5. $(5 - 4x)(3 - 2x)$

6. $(2x - 1)(3x + 5)$

7. $(4x + 3)(x + 8)$

8. $(7x - 2)(2x - 7)$

9. $(3x - 2)(x + 10)$

10. $3(2a + 5c) - 2(4a - 6c)$

11. $2(a - 6)(2a + 7)$

12. $2x(x + 5) - x^2(3 - x)$

13. $(3t^2 - 8)(t^2 + 5)$

14. $(2r + 7)^2$

15. $(c + 7)(c - 3)$

Factoring Trinomials $ax^2 + bx + c$

Accelerated Geometry

Factor each trinomial. If the trinomial cannot be factored, write prime.

1. $x^2 + 5x + 6$

2. $y^2 + 5y + 4$

3. $m^2 + 12m + 35$

4. $p^2 + 8p + 15$

5. $a^2 + 8a + 12$

6. $n^2 + 4n + 4$

7. $x^2 + 9x + 18$

8. $x^2 + x + 3$

9. $y^2 - 6y + 8$

10. $c^2 - 8c + 15$

11. $m^2 - 2m + 1$

12. $b^2 - 9b + 20$

13. $x^2 - 8x + 7$

14. $n^2 - 5n + 6$

15. $y^2 - 8y + 12$

16. $c^2 - 4c + 5$

17. $x^2 - x - 12$

18. $m^2 + 5m - 6$

19. $a^2 + 4a - 12$

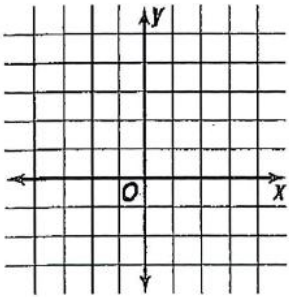
20. $y^2 - y - 6$

21. $b^2 - 3b - 10$

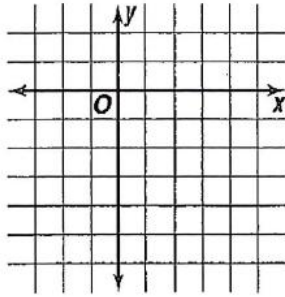
Solving Systems of Equations by Graphing

Solve each system of equations by graphing. Write your solution as an ordered pair.

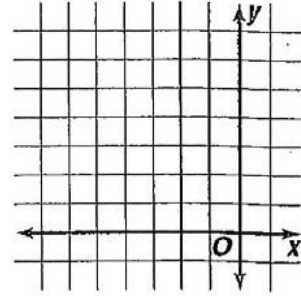
1. $y = 3x$
 $y = -x + 4$



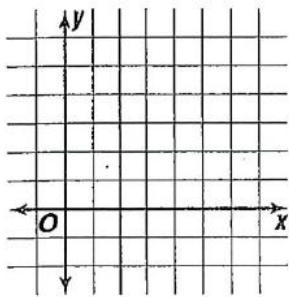
2. $y = x - 4$
 $y = 2x - 3$



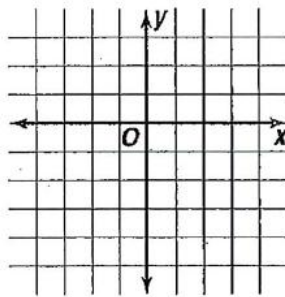
3. $x = -3$
 $y = x + 6$



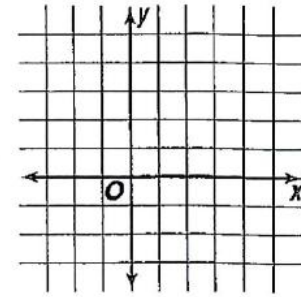
4. $x - y = 1$
 $y = 5$



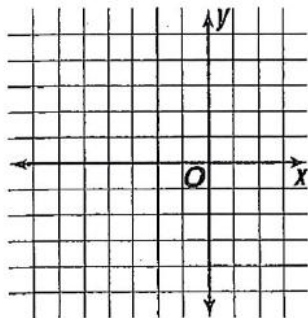
5. $x + y = -1$
 $x - y = 3$



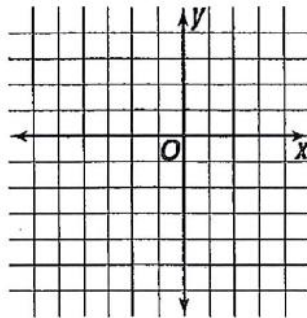
6. $x + y = 2$
 $y = -2x + 4$



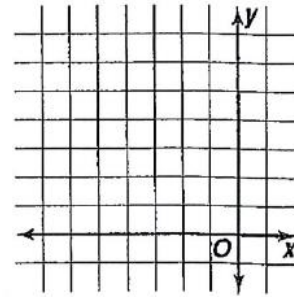
7. $y = x + 3$
 $y = -x - 5$



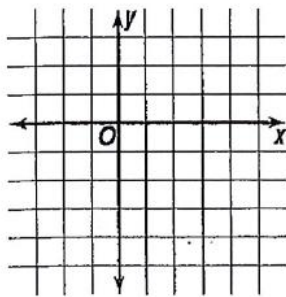
8. $-x + y = 2$
 $-2x + y = 7$



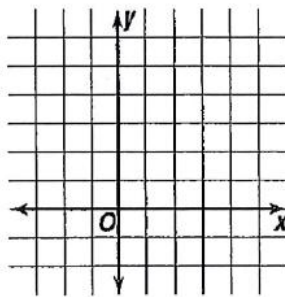
9. $y = x + 6$
 $y = 2$



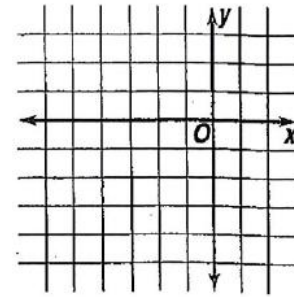
10. $x - y = 4$
 $y = -2x + 2$



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



12. $y = x + 2$
 $2x + y = -1$



Solving Systems of Equations by Substitution

Accelerated Geometry

Solve each system of equations by Substitution. Write your solution as an ordered pair.

1. $y = x + 8$
 $x + y = 2$

2. $y = 2x$
 $5x - y = 9$

3. $y = x + 2$
 $3x + 3y = 6$

4. $x = 3y$
 $2x + 4y = 10$

5. $x = y + 9$
 $x + y = -7$

6. $y = 2x + 1$
 $2x - y = 3$

7. $x = 3y$
 $2x + 3y = 15$

8. $x - 2y = 4$
 $3x = 6y + 12$

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

10. $4y + 2x = 24$
 $x = 3y + 2$

11. $y = 3x + 8$
 $4x + 2y = 6$

12. $x = 3y + 10$
 $2x + 2y = -12$

Solving Systems by Elimination (Add/Sub)

Solve each system of equations by Elimination. Write your solution as an ordered pair.

$$\begin{aligned} 1. \quad x + y &= 4 \\ x - y &= -6 \end{aligned}$$

$$\begin{aligned} 2. \quad x - y &= 7 \\ x + y &= 1 \end{aligned}$$

$$\begin{aligned} 3. \quad 3x + y &= 12 \\ x + y &= 8 \end{aligned}$$

$$\begin{aligned} 4. \quad x + 5y &= -12 \\ x + 2y &= -9 \end{aligned}$$

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

$$\begin{aligned} 6. \quad 4x + 2y &= 2 \\ -4x - 3y &= 3 \end{aligned}$$

$$\begin{aligned} 7. \quad 4x - 3y &= 10 \\ 2x - 3y &= 2 \end{aligned}$$

$$\begin{aligned} 8. \quad 2x + 5y &= 1 \\ 2x + 10y &= 10 \end{aligned}$$

$$\begin{aligned} 9. \quad 3y &= x + 4 \\ 2x + 3y &= 19 \end{aligned}$$

Solving Systems by Elimination (Mult/Div)

Solve each system of equations by Elimination. Write your solution as an ordered pair.

1. $x + 3y = 6$
 $2x - 7y = -1$

2. $9x + 3y = 12$
 $2x + y = 5$

3. $3x - y = 14$
 $5x + 4y = 12$

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

5. $3x + y = 2$
 $6x + 2y = 4$

6. $5x - y = 16$
 $-4x - 3y = 10$

Solving Systems by Elimination (Mult/Div)

Accelerated Geometry

Solve each system of equations by Elimination. Write your solution as an ordered pair.

7. $5x + 2y = 24$
 $10x - 5y = -15$

8. $3x + 4y = 6$
 $7x + 8y = 10$

9. $2x - 3y = 5$
 $3x + 9y = 21$

10. $3x + 2y = 11$
 $6x + 3y = 13$

11. $6x - 2y = 4$
 $2x - 5y = -3$

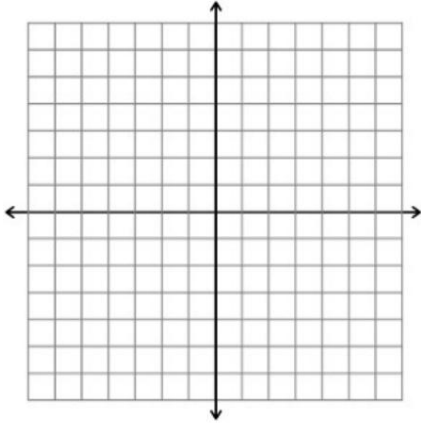
12. $-7x - 3y = -5$
 $5x + 6y = 19$

Solving Systems of Inequalities

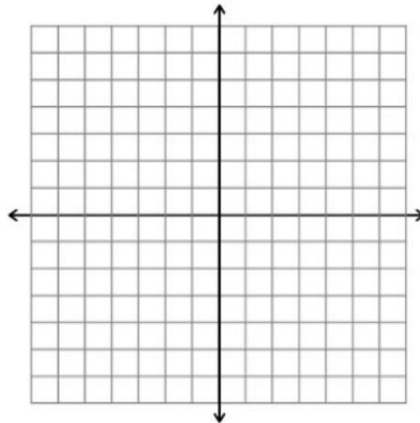
Accelerated Geometry

Solve each system of inequalities by graphing. Shade both regions and their overlap.

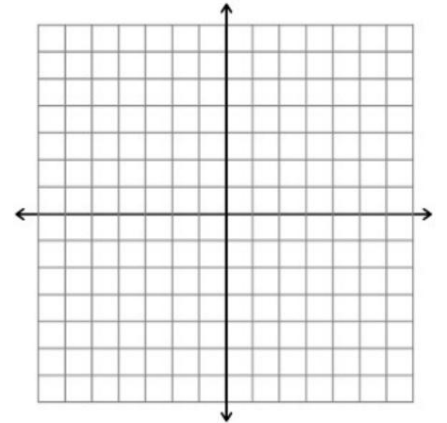
1.
$$\begin{cases} y \leq 2x + 1 \\ y > -x + 4 \end{cases}$$



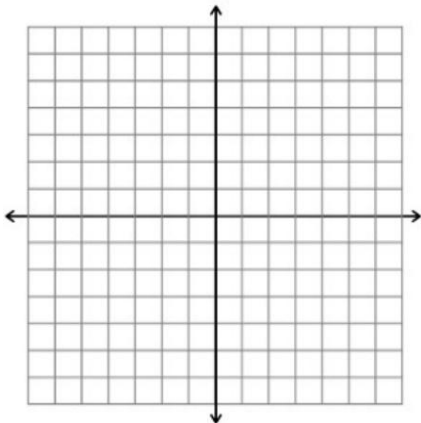
2.
$$\begin{cases} y \geq -\frac{1}{2}x + 3 \\ y \leq x - 2 \end{cases}$$



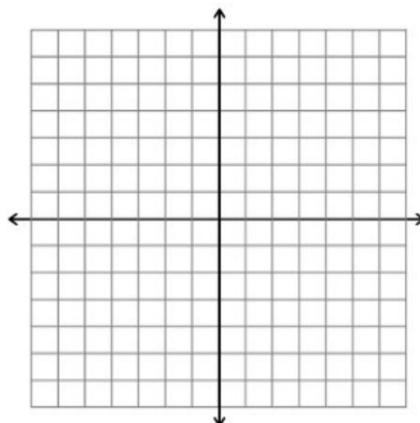
3.
$$\begin{cases} y < x + 2 \\ y \geq -2x + 6 \end{cases}$$



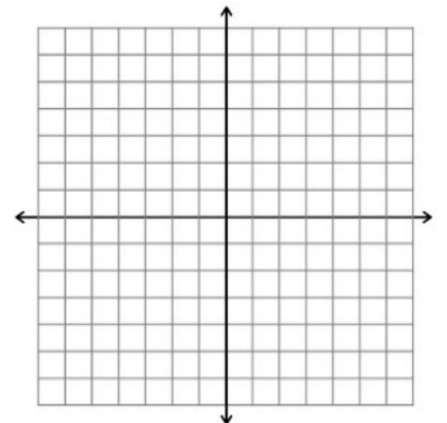
4.
$$\begin{cases} y \geq 3x - 1 \\ y \leq -x + 5 \end{cases}$$



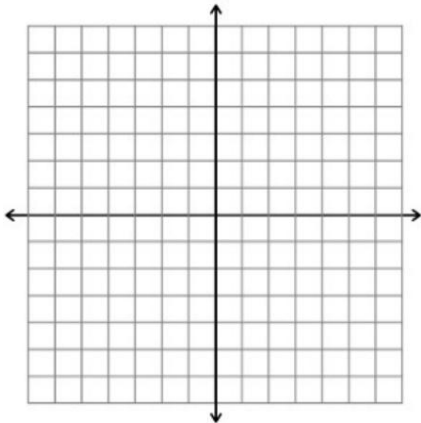
5.
$$\begin{cases} y < -x + 1 \\ y > 2x - 3 \end{cases}$$



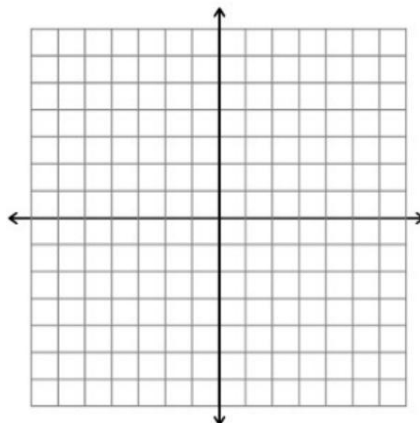
6.
$$\begin{cases} y \geq \frac{1}{3}x - 2 \\ y < -\frac{2}{3}x + 4 \end{cases}$$



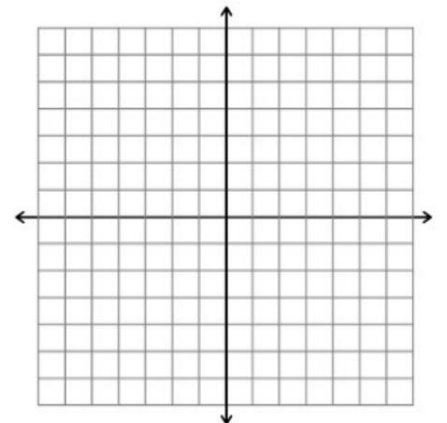
7.
$$\begin{cases} y < -\frac{3}{4}x + 5 \\ y \geq \frac{1}{2}x - 1 \end{cases}$$



8.
$$\begin{cases} y \leq 2 \\ y > x \end{cases}$$



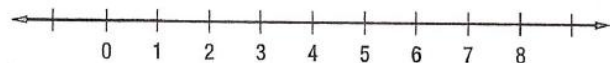
9.
$$\begin{cases} y < -x - 3 \\ y > -x + 2 \end{cases}$$



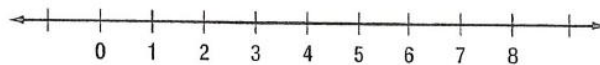
The Real Number Line

Find an approximation, to the nearest tenth, for each square root. Then graph the square root on a number line.

7. $\sqrt{5}$



8. $\sqrt{19}$



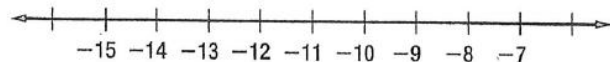
9. $-\sqrt{22}$



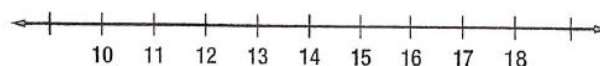
10. $\sqrt{80}$



11. $-\sqrt{145}$



12. $\sqrt{275}$



Determine whether each number is rational or irrational. If it is irrational, find two consecutive integers between which its graph lies on the number line.

13. $\sqrt{25}$

14. $\sqrt{11}$

15. $-\sqrt{42}$

16. $\sqrt{169}$

17. $-\sqrt{35}$

18. $\sqrt{66}$

Simplifying Radical Expressions

Simplify each expression. Leave in radical form.

1. $\sqrt{24}$

2. $\sqrt{48}$

3. $\sqrt{72}$

4. $\sqrt{27}$

5. $\sqrt{300}$

6. $\sqrt{63}$

7. $\sqrt{2} \cdot \sqrt{18}$

8. $\sqrt{5} \cdot \sqrt{20}$

9. $\sqrt{8} \cdot \sqrt{10}$

10. $\sqrt{12} \cdot \sqrt{6}$

11. $2\sqrt{3} \cdot \sqrt{3}$

12. $5\sqrt{11} \cdot 2\sqrt{11}$

13. $\frac{\sqrt{24}}{\sqrt{6}}$

14. $\frac{\sqrt{75}}{\sqrt{3}}$

15. $\frac{\sqrt{96}}{\sqrt{8}}$

16. $\frac{\sqrt{48}}{\sqrt{6}}$

17. $\frac{\sqrt{2}}{\sqrt{5}}$

18. $\frac{\sqrt{6}}{\sqrt{8}}$

Operations with Radical Expressions

Simplify each expression.

1. $5\sqrt{2} + 3\sqrt{2}$

6. $9\sqrt{3} - \sqrt{3}$

7. $3\sqrt{15} - 8\sqrt{15}$

8. $14\sqrt{17} - 8\sqrt{17}$

9. $12\sqrt{7} - 3\sqrt{7} + 5\sqrt{7}$

10. $8\sqrt{15} + 2\sqrt{15} - 11\sqrt{15}$

11. $-4\sqrt{2} - 7\sqrt{2} - \sqrt{2}$

12. $8\sqrt{5} - 12\sqrt{5} + 2\sqrt{5}$

13. $3\sqrt{8} + 5\sqrt{2}$

14. $3\sqrt{3} - 6\sqrt{12}$

15. $3\sqrt{24} + 5\sqrt{6}$

16. $\sqrt{72} - 9\sqrt{2}$

17. $-2\sqrt{48} + 5\sqrt{3}$

18. $7\sqrt{27} + 2\sqrt{12}$

19. $5\sqrt{27} - 2\sqrt{48} + \sqrt{12}$

20. $6\sqrt{20} + \sqrt{125} - 3\sqrt{80}$

