

Algebra 1 Final Review

1. Solve for x .

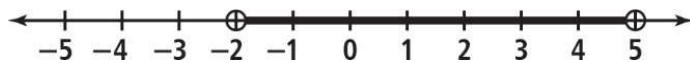
a. $4x + 2 - (3 + 3x) = 7$

b. $\frac{3}{4}(8x - 6) - 2 = \frac{1}{2} - x$

3. Solve the inequality.

$$5(x + 1) - 10 \geq 2x + 3(x + 2)$$

5. Write a compound inequality for the graph below



7. Find the equation of the line that passes through $(-5, 0)$ and $(4, 3)$.

2. Solve the equation $E = v + Ir$ for r .

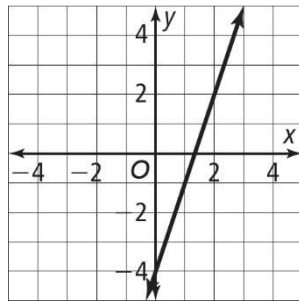
4. Solve the compound inequality.

$$9 - 4x \geq 5 \text{ or } 4(-1 + x) - 6 \geq 2$$

6. Graph the equations $y = 3x - 2$.

9. Denzel must practice the piano for 210 min each week. He practices for 30 min each day. Write a linear equation to represent the number of minutes Denzel still has to practice after x days.

10. What is an equation of the line shown on the graph in point-slope form, using the point $(1, -1)$?



12. What is an equation in point-slope form of the line that passes through $(-3, -1)$ and has a slope of 2?

11. Graph the system of inequalities.

$$2x - y \leq 3$$

$$x - 2y \geq -2$$

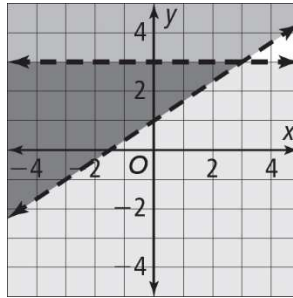
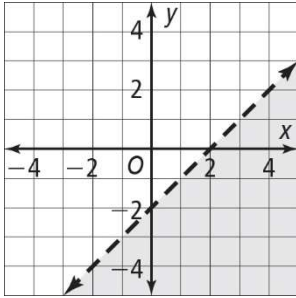
13. Determine whether the lines are *parallel*, *perpendicular*, or *neither*.

$$2x + 4y = 32 \quad y = -\frac{1}{2}x + 16$$

14. Dwayne has \$80 to spend on video games. Used video games cost \$10 each, and new video games cost \$20 each. What equation in standard form determines the number x of used video games and the number y of new video games he can buy?

15. Ten granola bars and twelve bottles of water cost \$23. Five granola bars and four bottles of water cost \$10. How much do one granola bar and one bottle of water cost?

16. What is the equation of the graphs below?



17. A hardware store rents vacuum cleaners that customers may use for part or all of a day before returning. The store charges a flat fee plus an hourly rate. Write a linear function f for the total rental cost of a vacuum cleaner.

- What is the flat fee the store charges?
- Using your equation, what would be the cost to a customer to rent a vacuum for 7 hours?

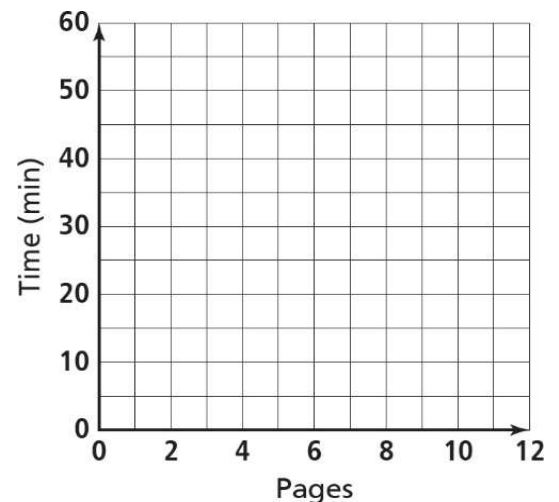
Hours	1	1.5	2	2.5	3
Cost (\$)	20	23	26	29	32

18. Each day, Amaya studies language flashcards and then reads some pages in a novel, as shown in the table below.

Pages	4	6	8	10	12
Time (min)	27	32	39	45	51

- Make a scatter plot of the total time she studies as a function of the number of pages she reads.
- Draw a trend line.
- What type of correlation does your scatter plot show?
- Which of the following equations is closest to your trend line?

- $y = 4x + 12$
- $y = 5x + 12$
- $y = 6x + 10$
- $y = 3x + 14$



19. What is the solution to the following systems of equations?

a. $y = \frac{2}{3}x + 5$

$7x - 3y = 15$

b. $y = -\frac{7}{2}x + 11$

$7x + 2y = 20$

c. $4x + 2y = -1$
 $3x + 4y = 3$