

Incoming Algebra 1 Honors Students

Below is the summer work for Algebra 1 Honors. It is imperative that you are well prepared for this course and come with completed summer work as well as strong skills in the following topics. Included here is the summer work and here is a link to Khan Academy to get ready for Algebra 1. [Algebra 1 Prep](#) On Khan Academy, you will find videos additional practice on the topics if you need additional support. The summer work for Algebra 1 Honors is **mandatory!** These skills are critical for success in the course and *students will be tested on the third day of the school year.* Please reach out to mshaw@academyatthelakes.org with any further questions.

1. Complete the following operations.

a. $-3 + -9$

c. $-12 + 56$

e. $245 + -131$

g. $47 - 156$

b. $-4.5 + 203.25$

d. $202\frac{1}{2} + (-38\frac{1}{3})$

f. $-0.54 + -.068$

h. $-22.25 + -13\frac{1}{2}$

2. During the first round of a game, Silas scores 15 points. He loses 30 points during the second round and gains 10 points during his final turn. What is Silas' final score?

3. Maggie is rock climbing. After reaching the summit, she descends 14 feet in $2\frac{1}{3}$ minutes. If she continues at this rate, where will Maggie be in relation to the summit after 8 minutes?

4. Complete the following operations.

a. $2\frac{1}{3} + \frac{4}{5}$

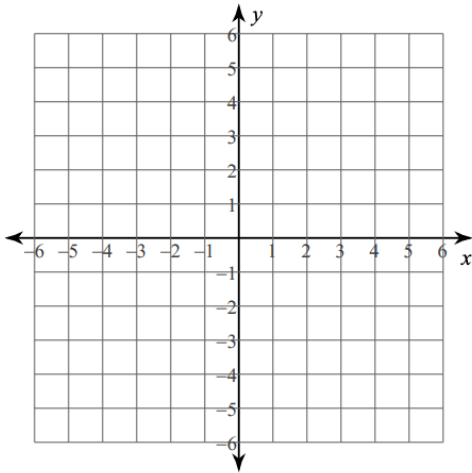
b. $8\frac{2}{3} - 1\frac{1}{4}$

c. $1\frac{2}{3} \cdot 2\frac{2}{5}$

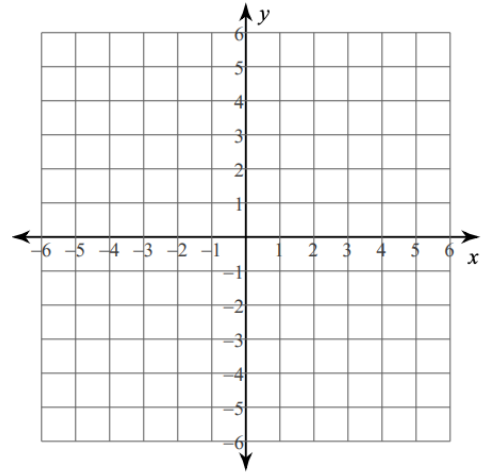
d. $4\frac{3}{4} \div 2\frac{1}{2}$

5. Graph the equations in slope-intercept form.

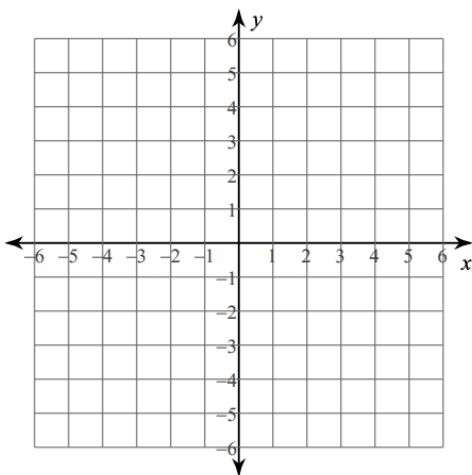
a. $y = \frac{1}{2}x - 3$



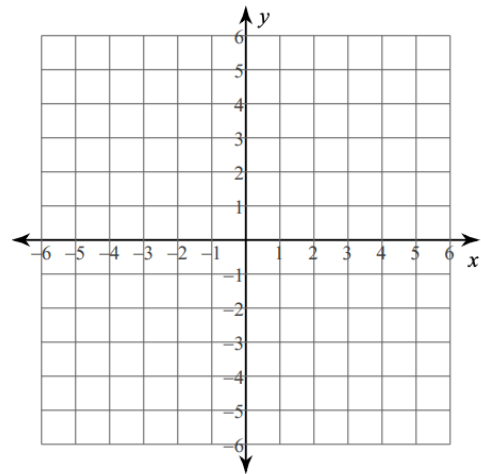
c. $y = -4x + 2$



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



d. $y = 2x + 4$



6. Use exponent rules to re-write the following as one single, positive exponent.

a. $5^2 \cdot 5^7$

c. $(7^3)^4$

e. $12^9 \div 12^4$

g. $4^2 \cdot 8^2$

b. 6^{-3}

d. $(3x^4)^6$

f. $\frac{1}{4^{-5}}$

7. Evaluate the expression for the given variables.

a. $y^2 - x$, when $x = 7, y = 8$

c. $-2ab + 4b$, when $a = 5, b = -3$

b. $p^3 + 10 + m$, when $m = 9, p = 3$

d. $\frac{1}{4}g^2 - gh$, when $g = -3, h = 9$

8. Simplify the expressions below.

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

b. $-23m - 12 + 19m + 7 - 3z$

9. Conor buys 75 tokens for games at the arcade. The price to play each game is 3 tokens. If Conor has already played x games, which expression is equivalent to the number of tokens that remain?

Ⓐ $3x - 75$

Ⓒ $3(25 + x)$

Ⓑ $3(25 - x)$

Ⓓ $75 + 3x$

10. A family drives 325 miles per day during a road trip.
- Write an inequality to find how many days, d , the family must drive to travel at least 1,300 miles.

- For how many days must the family drive to travel at least 1,300 miles?

11. Ezra is saving money to buy a snowboard that costs \$225. He already has \$45 and can earn the rest by walking ten dogs. If d represents how much he earns for walking each dog, which of the following equations can be solved to find how much Ezra is paid for walking each dog?

(A) $225 = 45d - 10$

(B) $225 - 45 = 10d$

(C) $25 + 45 = 10d$

(D) $45 = 225 - d$

12. A fire hydrant with a blue cap provides water at a rate of 1,500 gallons per minute. A fire hydrant with a green cap provides water at a rate of 1,000 gallons per minute. A fire hydrant with a purple cap provides water at half the rate of a fire hydrant with a green cap.

- Write an equation to relate the flow of water from the blue hydrant, b , to the flow from the green hydrant, g .

- Write an equation to relate the flow of water from the purple hydrant, p , to the flow from the blue hydrant, b .

13. Solve the following equations.

a. $5.25x + 6 = 74.25$

b. $3(17x - 6.5) = 108$

14. Jorge finds that 56% of his 75 classmates like salsa music and 80% of his 60 relatives like salsa music. How many more of Jorge's relatives as compared to his classmates like salsa music?

15. There are 9.5 ounces of juice in a container. An additional 1.75 ounces of juice are poured into the container each second. How many ounces of juice are in the container after 6 seconds?

Ⓐ 11.25 ounces

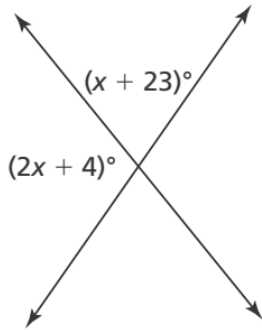
Ⓑ 17.25 ounces

Ⓒ 20 ounces

Ⓓ 57 ounces

16. The graph of a function is a line that passes through the points (3, 17) and (6, 32). How would you find the rate of change or slope for the function?

17. Two lines are intersecting. What is the value of x ?



18. Caleb's puppy weighs 2,250 grams. If the puppy weighed 600 grams at his last visit to the veterinarian's office, what is the percent increase in the puppy's weight rounded to the nearest whole number?

19. The graph shows the relationship between the amount of water that flows from a fountain and time. Write an equation to represent the amount of water that flows after x minutes.

