

Summer Packet 2016-2017

The purpose of this summer work is to help prepare you for your upcoming math class. The work will tap into your prior knowledge and review past content, concepts, and skills. Our expectation is that you arrive on the first day of school able to demonstrate mastery of the material in this packet. In order to achieve this, please allow yourself plenty of time to work on the problems, use your resources (such as the review materials provided, Khan Academy, or the math faculty here at the school during summer school hours (July 18^h through Aug 25th, 9 am to noon, Monday through Thursday)), and work each problem to completion.

You will use Khan Academy to complete the summer work for Algebra 1. This work will be due on Friday, September 2nd, and will be 3% of your first quarter grade. 10 points will be deducted for each day it is late. Each math problem in the packet will be graded as follows:

Summer Work Assignments	Grading	Evidence	Perseverance
Khan Academy (found on page 2)	Two points will be awarded for each correct answer in a row. (See page 2 for more details.)	Students will complete five problems in a row correctly per each topic assigned.	Students have an infinite amount of problems to attempt on Khan Academy. If students are struggling, they can access helpful videos on Khan and/or example problems.
In the event you do not have access to technology, you may complete the Written Packet (found on page 3 to 22)	Two points will be awarded for the correct answer.	Students will complete five problems correctly per topic.	Students will show their work when solving a problem. If they are struggling, they will seek out extra help.

Your teacher might choose to give a non-graded assessment on the first week of school in order to target remediation strategies and requirements.

A note from your Algebra 1 teacher:

This packet will help you to sharpen your skills and be ready for the first day of the 2016-2017 school year. These problems shouldn't take too long. HAVE A GREAT SUMMER!!!!

Khan Academy – YOU MUST LOG IN TO HAVE KHAN ACADEMY GIVE YOU CREDIT FOR YOUR WORK.

How to Log Into Khan Academy to complete your summer work:

- If you do not have an account yet:
 1. Go to khanacademy.org
 2. Click on Start Learning Now
 3. Click on Sign in with Gmail
 4. Create an Account with your gapps account
 5. Type in the Search Engine Bar The Topic you would like to complete or click on the link provided
- If you have an account already with your gapps email:
 1. Go to khanacademy.org
 2. Click on the log in button on the top right hand side of the screen
 3. Log in with your email and password
 4. Type in the Search Engine Bar the Topic you would like to complete or click on the link provided

Summer Work Topics for Algebra I **YOU MUST LOG IN TO HAVE KHAN ACADEMY GIVE YOU CREDIT FOR YOUR WORK. SEE ABOVE.**

- a. Subtracting fractions with unlike denominators <http://tinyurl.com/m99tpdv>
- b. Dividing fractions <http://tinyurl.com/o5bpx8h>
- c. Order of operations challenge <http://tinyurl.com/k5q59gt>
- d. Evaluating expressions in two variables <http://tinyurl.com/ke7mdke>
- e. Writing basic expressions with variables <http://tinyurl.com/ma8ln8z>
- f. Combining like terms with negative coefficients and distribution <http://tinyurl.com/ortbjn9>
- g. Combining like terms with negative coefficients <http://tinyurl.com/l7a7djj>
- h. Two-step equations <http://tinyurl.com/omd32c2>
- i. Points on the coordinate plane <http://tinyurl.com/p2q9knd>
- j. Graph from slope-intercept equation <http://tinyurl.com/olsmkm5>

***Khan Academy may ask for less than five in a row on some sections instead of five correct in a row. You may have to click on practice again in order to complete five problems for these sections.**

Students **MUST** complete five problems in a row correctly for all of the topics above to earn full credit. Partial credit will be awarded as described below. If you struggle on any of the problems, please reference the videos for each topic and/or look for hints found on the right hand side of your screen when attempting a problem. Please note you do not have to complete all problems in one sitting. Khan Academy will remember where you left off. **Be sure to log-in every time you do additional work!**

Grading for Khan Academy for each topic:

- Credit can **only** be awarded for any work completed after June 1st, 2016.
- 0 correct in a row: 0 points
- 1 correct in a row: 2 points

- 2 correct in a row: 4 points
- 3 correct in a row: 6 points
- 4 correct in a row: 8 points
- 5 correct in a row: 10 points

Written Packet (Only do this packet if you do not have access to technology to complete the Khan Academy assignment.)

Subtracting Fractions with Unlike Denominators

Simplify.

1. $\frac{3}{2} - \frac{1}{3} = ?$

2. $\frac{9}{12} - \frac{5}{10} = ?$

3. $\frac{7}{6} - \frac{9}{12} = ?$

4. $\frac{7}{3} - \frac{8}{5} = ?$

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

6. $\frac{3}{6} - \frac{4}{12} = ?$

7. $\frac{3}{8} - \frac{1}{6} = ?$

8. $\frac{4}{8} - \frac{4}{12} = ?$

$$\frac{6}{3} - \frac{3}{6} = ?$$

9.

10.

$$\frac{9}{4} - \frac{4}{3} = ?$$

Dividing Fractions

Simplify.

$$\frac{1}{3} \div \frac{3}{2} = ?$$

1.

$$\frac{9}{8} \div \frac{9}{5} = ?$$

2.

$$\frac{7}{9} \div \frac{8}{9} = ?$$

3.

$$\frac{4}{7} \div \frac{2}{5} = ?$$

4.

$$\frac{5}{7} \div \frac{4}{5} = ?$$

5.

$$\frac{4}{3} \div \frac{1}{5} = ?$$

6.

7. $\frac{7}{6} \div \frac{5}{9} = ?$

8. $\frac{5}{2} \div \frac{7}{9} = ?$

9. $\frac{1}{2} \div \frac{3}{8} = ?$

10. $\frac{4}{3} \div \frac{9}{5} = ?$

Order of Operations 2

Solve each of the following using order of operations.

1. $\frac{1}{5}(6 + 3 + 1)^2$

2. $(2 \cdot 3)^2 + 5^2$

3. $(4 \cdot 2)^2 - (2 \cdot 2)^2$

4. $6^2 - 2(5 + 1 + 3)$

5. $\frac{1}{3}(4 \cdot 3) + 2^3$

6. $7^2 + 3(4^2 + 3 + 2)$

7. $(1 + 5^2) - 16 \left(\frac{1}{2}\right)^3 =$

8. $2(3^2 + 4^2)$

9. $\left(\frac{1}{5}\right)^2 (3 + 2 + 5)^2$

10. $\left(\frac{1}{3}\right)^2 + 3^2$

Evaluating Expression in Two Variables

Evaluate the expression by plugging in the values for the variables.

1.

Evaluate $8a + 3b - 10$ when $a = 2$ and $b = 5$.

2.

Evaluate $6 + \frac{4}{a} + \frac{b}{3}$ when $a = 4$ and $b = 3$.

Evaluate $5w - \frac{w}{x}$ when $w = 6$ and $x = 2$.

3.

Evaluate $25 - 5e + \frac{3}{f}$ when $e = 4$ and $f = 3$.

4.

Evaluate $7y + 13 - 4z$ when $y = 5$ and $z = 9$.

5.

Evaluate $jk - 4k - 7$ when $j = 8$ and $k = 3$.

6.

Evaluate $3 + 11t - 9u$ when $t = 9$ and $u = 11$.

7.

Evaluate $\frac{p}{4} + pq$ when $p = 8$ and $q = 6$.

8.

Evaluate $8 - \frac{m}{n} + m$ when $m = 8$ and $n = 2$.

9.

10.

Evaluate $8r - rs$ when $r = 6$ and $s = 5$.

Writing Expression with Variables

Write an expression to represent the product of 5 and z .

1.

Write an expression to represent p less than 4.

2.

Write an expression to represent 6 minus k .

3.

Write an expression to represent b plus 4.

4.

Write an expression to represent 12 times x .

5.

Write an expression to represent 7 divided by c .

6.

Write an expression to represent the sum of d and 9.

7.

Write an expression to represent 8 increased by g .

8.

Write an expression to represent 3 more than x .

9.

10.

Write an expression to represent the product of 11 and w .

Combining like Terms with Distribution 2

Multiple Choice: Circle the correct answer.

Combine the like terms using the distributive property.

Expand the expression and combine like terms:

1.

$$-3z - (-z - 2)$$

$-4z + 2$

$-2z - 2$

$-2z + 2$

$4z + 2$

Expand the expression and combine like terms:

2.

$$8 - 4(-x + 5)$$

$4x - 12$

$-4x - 12$

$4x + 13$

$4x + 5$

Expand the expression and combine like terms:

3.

$$6(5r - 11) - (5 - r)$$

$30r - 71$

$31r - 71$

$29r - 71$

$31r - 61$

Expand the expression and combine like terms:

4.

$$7n - (4n - 3)$$

$3n + 3$

$3n - 3$

$11n + 3$

$11n - 3$

Expand the expression and combine like terms: 5.

$$10 + 4(-8q - 4)$$

- $-22q - 6$
- $-32q + 6$
- $-32q - 6$
- $32q - 6$

Expand the expression and combine like terms: 6.

$$2(3y + 6) - 3(-4 - y)$$

- $9y$
- $5y + 24$
- $9y - 24$
- $9y + 24$

Expand the expression and combine like terms: 7.

$$-4(z + 3) - 4(5 - 4z)$$

- $-24z - 32$
- $12z + 8$
- $12z - 32$
- $12z + 32$

Expand the expression and combine like terms:

8.

$$8(10 - 6q) + 3(-7q - 2)$$

- $-69q + 78$
- $-55q + 74$
- $-69q + 74$
- $69q + 74$

Expand the expression and combine like terms:

9.

$$2(-2 - 4p) + 2(-2p - 1)$$

- $-12p - 6$
- $-10p - 6$
- $-12p + 6$
- $12p - 6$

10.

Expand the expression and combine like terms:

$$6(7 - 3y) + 6(y + 1)$$

- $12y + 48$
- $-12y + 43$
- $-12y + 48$
- $-12y - 48$

Combining like Terms with Negative Coefficients

Simplify each expression by combining like terms.

Combine the like terms to make a simpler expression: 1.

$$-n + (-4) - (-4n) + 6$$

Combine the like terms to make a simpler expression: 2.

$$3z + 2 + (-5z) + 6$$

Combine the like terms to make a simpler expression: 3.

$$2r + 1 + (-4r) + 7$$

Combine the like terms to make a simpler expression: 4.

$$-3k - (-8) + 2$$

Combine the like terms to make a simpler expression: 5.

$$-2x - x + 8$$

6.

Combine the like terms to make a simpler expression:

$$-4p + (-2) + 2p + 3$$

7.

Combine the like terms to make a simpler expression:

$$-2k - (-5) + 1$$

8.

Combine the like terms to make a simpler expression:

$$y - (-3y)$$

9.

Combine the like terms to make a simpler expression:

$$-4p + (-6p)$$

10.

Combine the like terms to make a simpler expression:

$$-k + 3k$$

Two step equations

Solve each equations for x.

Solve for x :

$$2x - 7 = 4$$

1.

Solve for x :

$$10x + 8 = 10$$

2.

Solve for x :

$$7x + 8 = 8$$

3.

Solve for x :

$$5x + 5 = 4$$

4.

Solve for x :

$$6x + 4 = 5$$

5.

Solve for x :

$$5x - 7 = 2$$

6.

Solve for x :

$$8x + 2 = 6$$

7.

Solve for x :

$$6x - 8 = 9$$

8.

Solve for x :

$$2x - 9 = 3$$

9.

Solve for x :

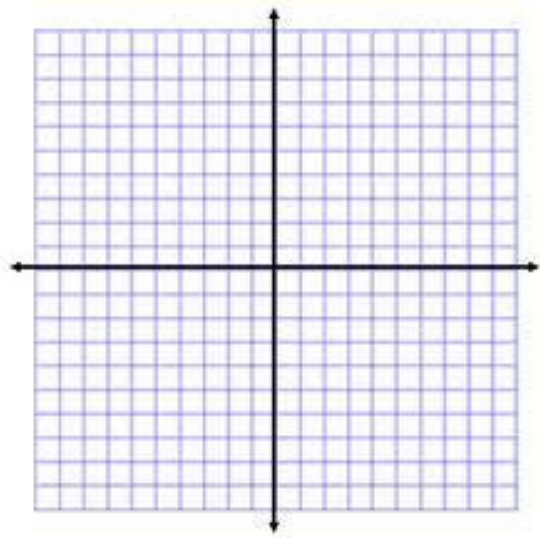
$$5x - 8 = 10$$

10.

Plotting Points of the Coordinate Plane

1. Plot the following points of the coordinate plane.

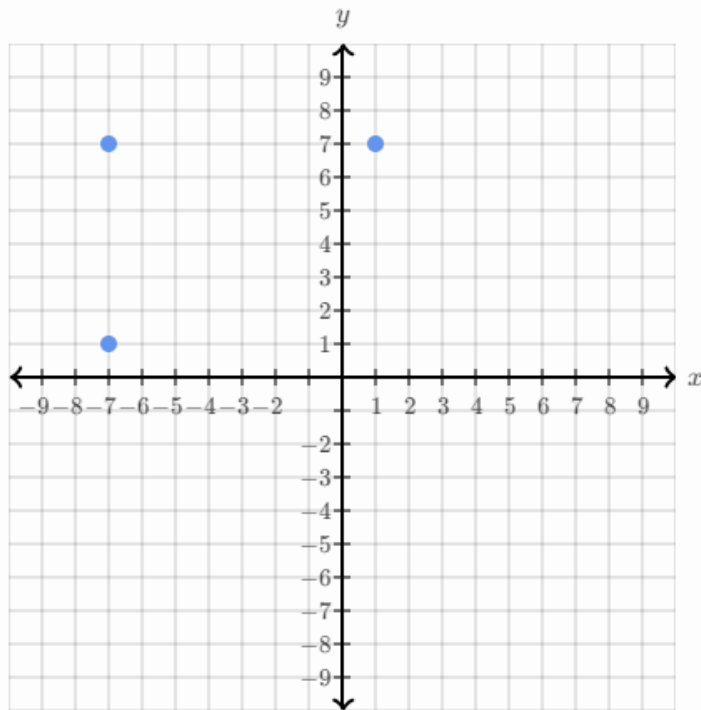
$(0, 6.5)$, $(-5, -5)$, and $(1, 9)$.



2.

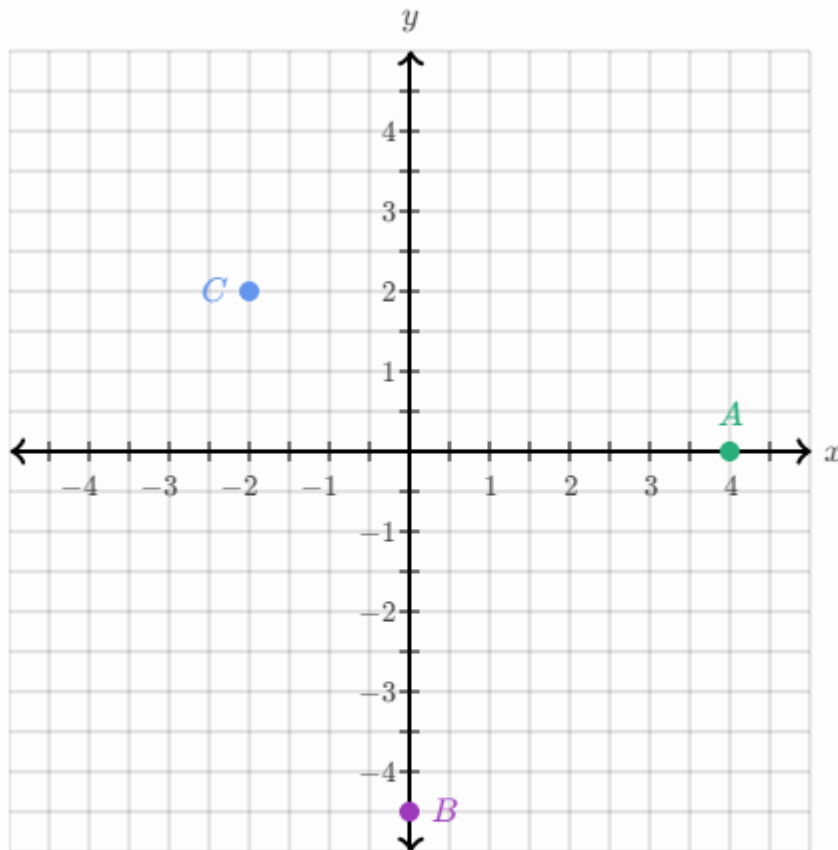
Which ordered pair is *not* graphed below?

- $(-7, 7)$
- $(-7, 1)$
- $(1, 7)$
- $(7, -7)$



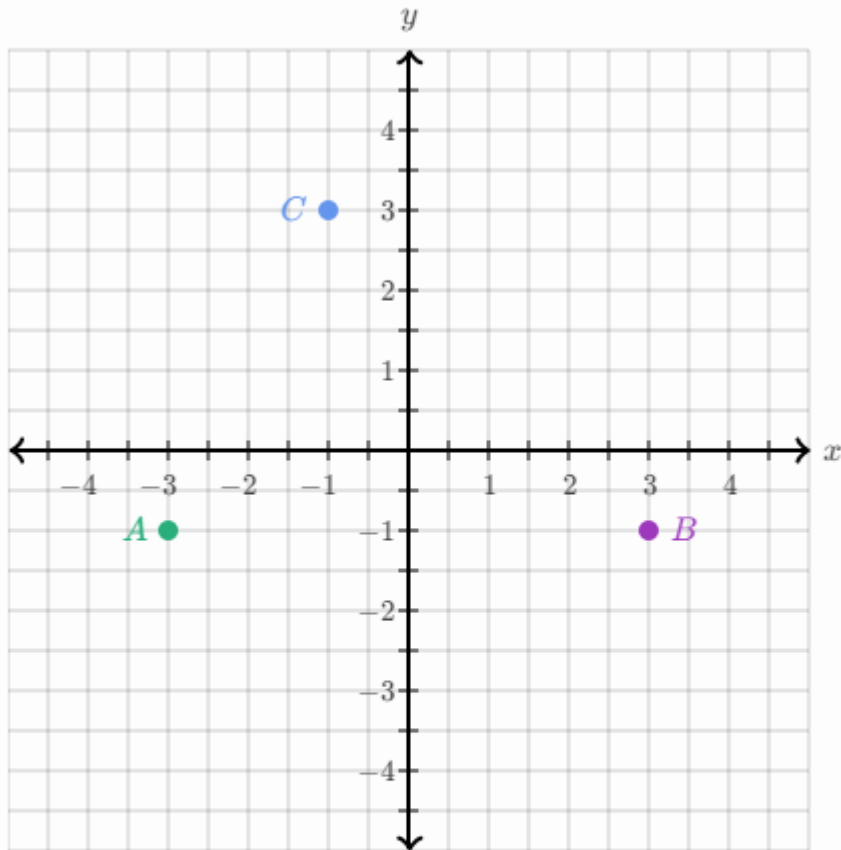
3.

Use the following coordinate plane to write the ordered pair for each point.



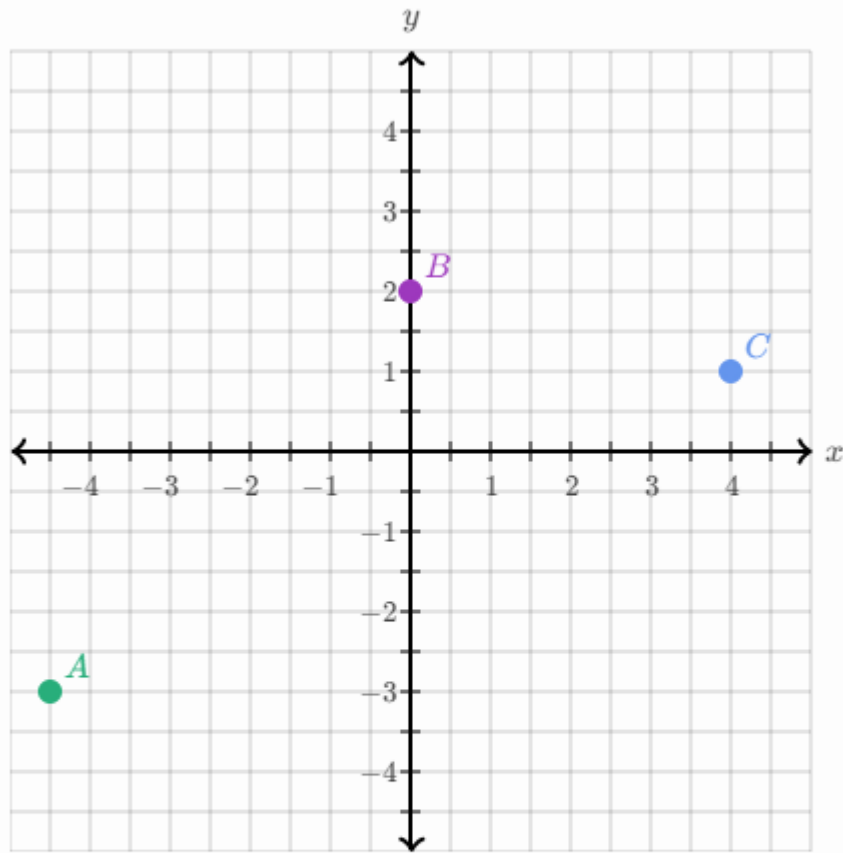
Point	Ordered pair
<i>A</i>	(<input type="text"/> , <input type="text"/>)
<i>B</i>	(<input type="text"/> , <input type="text"/>)
<i>C</i>	(<input type="text"/> , <input type="text"/>)

Use the following coordinate plane to write the ordered pair for each point.



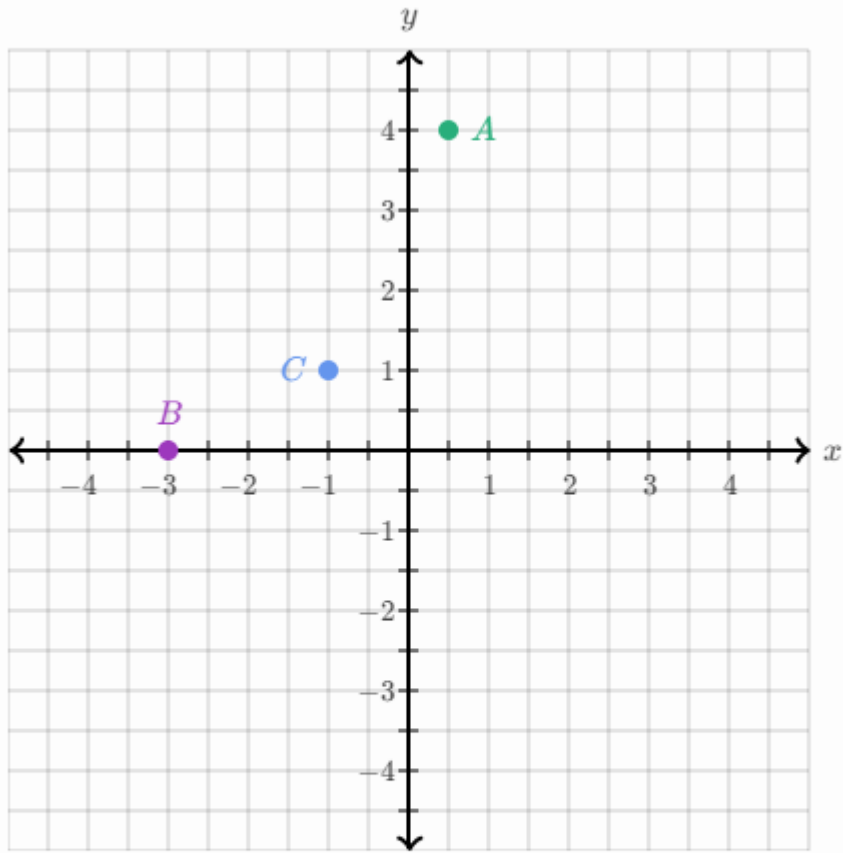
Point	Ordered pair
<i>A</i>	(<input type="text"/> , <input type="text"/>)
<i>B</i>	(<input type="text"/> , <input type="text"/>)
<i>C</i>	(<input type="text"/> , <input type="text"/>)

Use the following coordinate plane to write the ordered pair for each point.



Point	Ordered pair
<i>A</i>	(<input type="text"/> , <input type="text"/>)
<i>B</i>	(<input type="text"/> , <input type="text"/>)
<i>C</i>	(<input type="text"/> , <input type="text"/>)

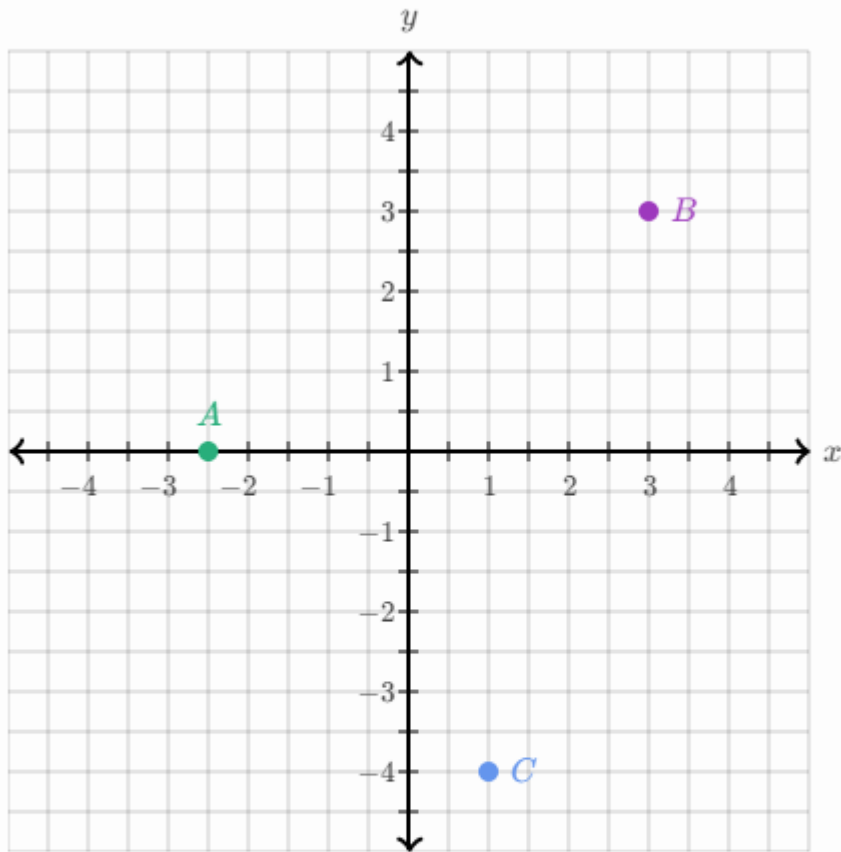
Use the following coordinate plane to write the ordered pair for each point.



Point	Ordered pair
<i>A</i>	(<input type="text"/> , <input type="text"/>)
<i>B</i>	(<input type="text"/> , <input type="text"/>)
<i>C</i>	(<input type="text"/> , <input type="text"/>)

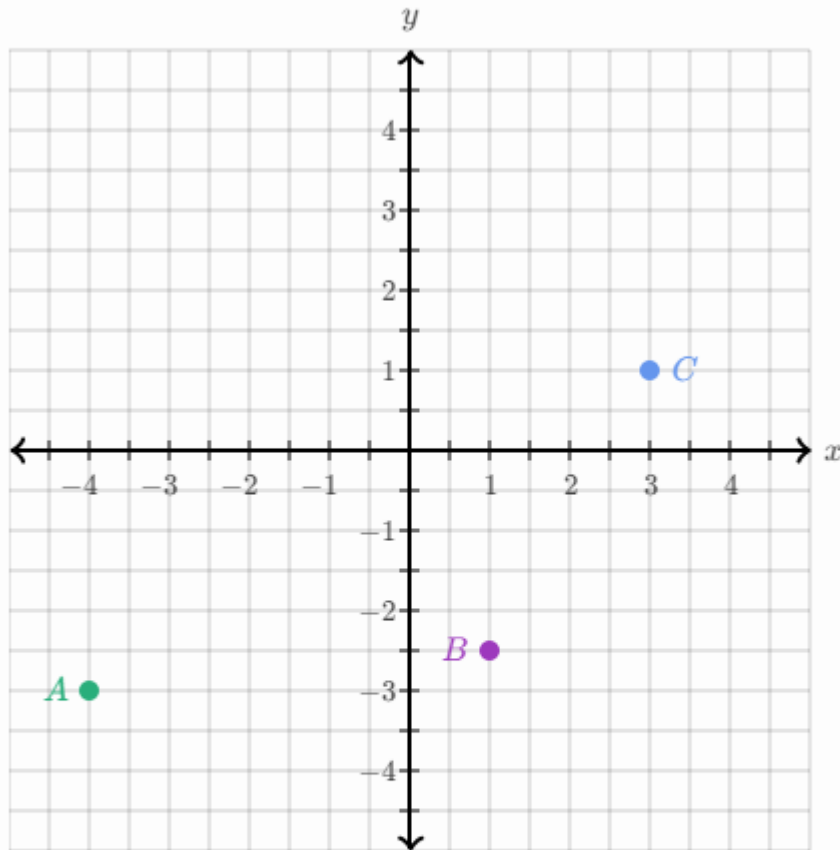
7.

Use the following coordinate plane to write the ordered pair for each point.



Point	Ordered pair
<i>A</i>	(<input type="text"/> , <input type="text"/>)
<i>B</i>	(<input type="text"/> , <input type="text"/>)
<i>C</i>	(<input type="text"/> , <input type="text"/>)

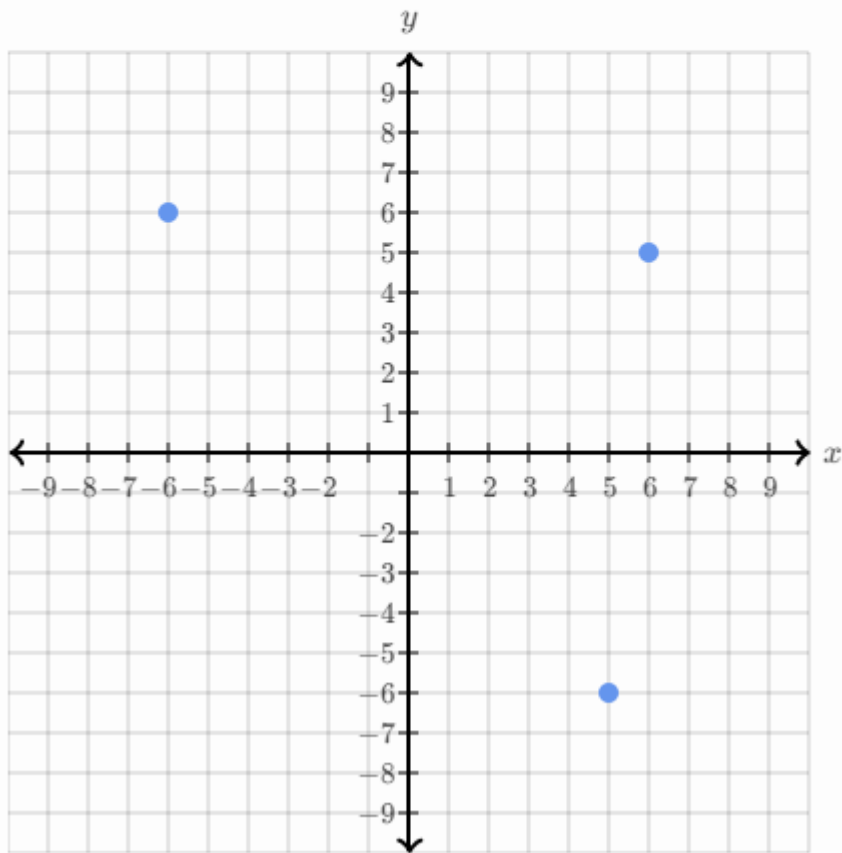
Use the following coordinate plane to write the ordered pair for each point.



Point	Ordered pair
<i>A</i>	(<input type="text"/> , <input type="text"/>)
<i>B</i>	(<input type="text"/> , <input type="text"/>)
<i>C</i>	(<input type="text"/> , <input type="text"/>)

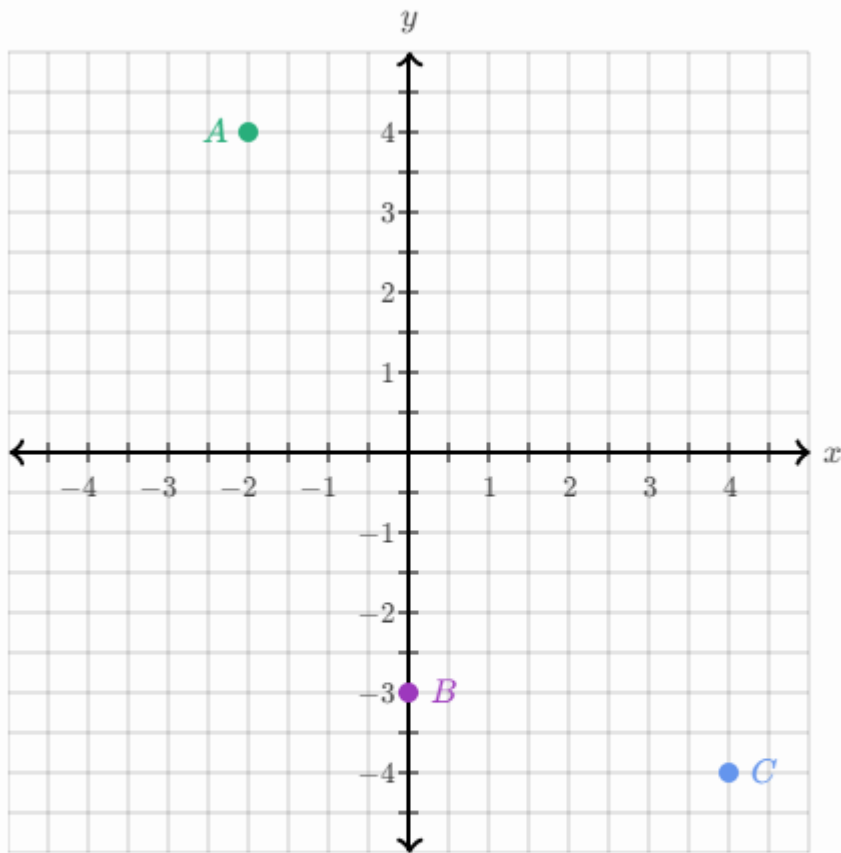
Which ordered pair is *not* graphed below?

- (6, -5)
- (5, -6)
- (-6, 6)
- (6, 5)



10.

Use the following coordinate plane to write the ordered pair for each point.



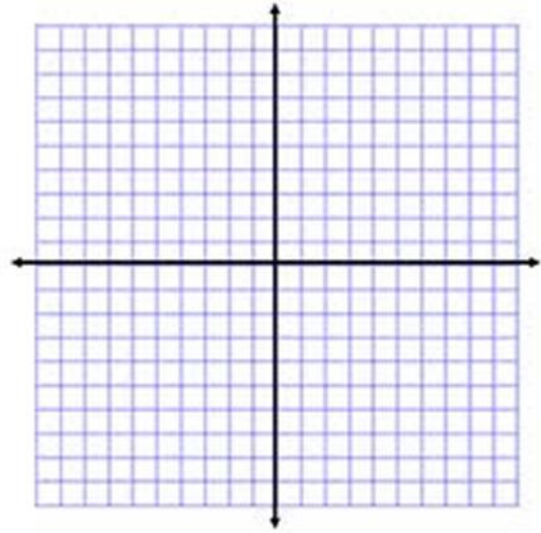
Point	Ordered pair
<i>A</i>	(<input type="text"/> , <input type="text"/>)
<i>B</i>	(<input type="text"/> , <input type="text"/>)
<i>C</i>	(<input type="text"/> , <input type="text"/>)

Graph from slope-intercept equation

1.

Graph the following equation.

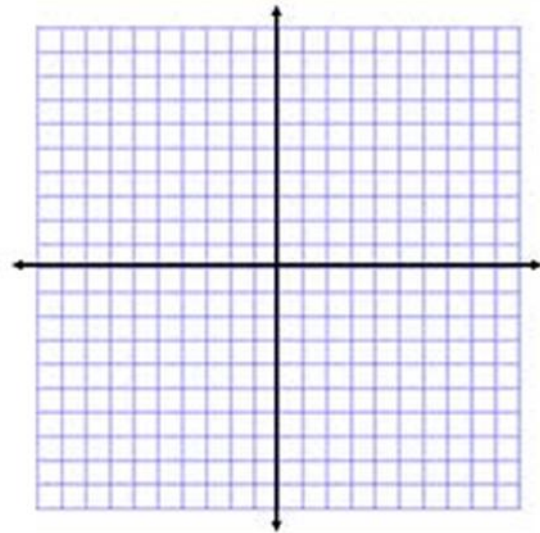
$$y = -2x + 5$$



2.

Graph the following equation.

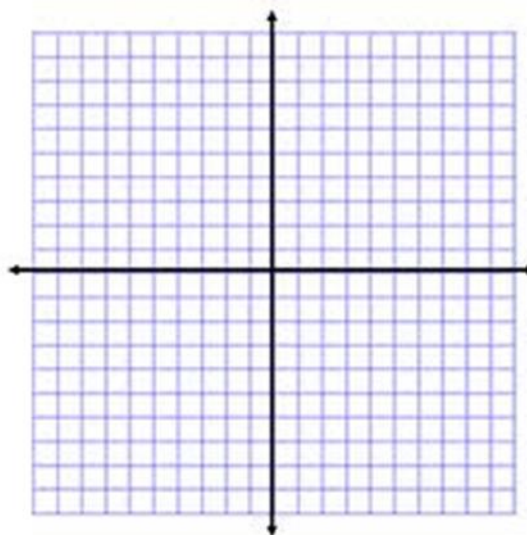
$$y = \frac{4}{5}x - 7$$



Graph the following equation.

$$y = \frac{6}{5}x + 1$$

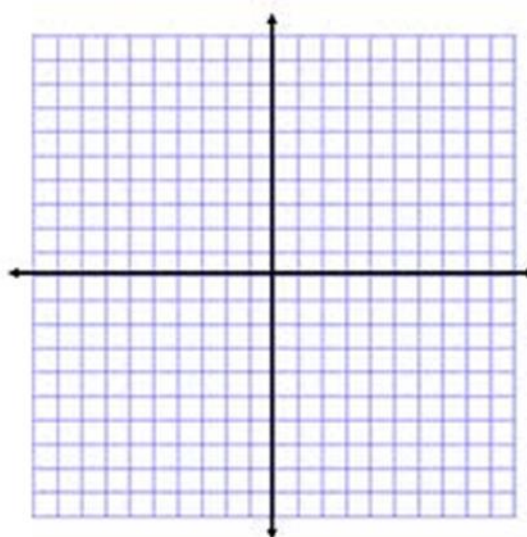
3.



Graph the following equation.

$$y = -x - 6$$

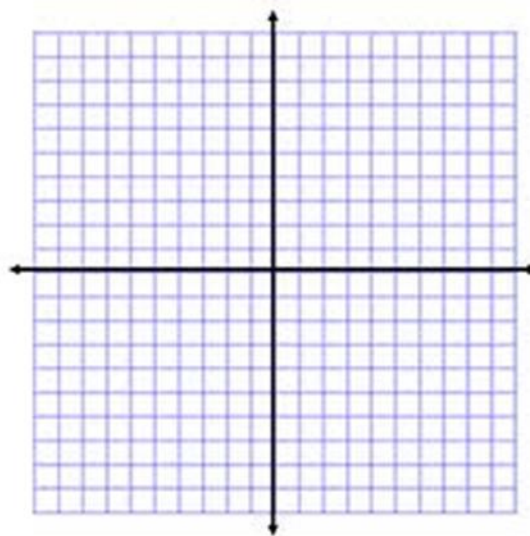
4.



Graph the following equation.

$$y = \frac{2}{3}x - 4$$

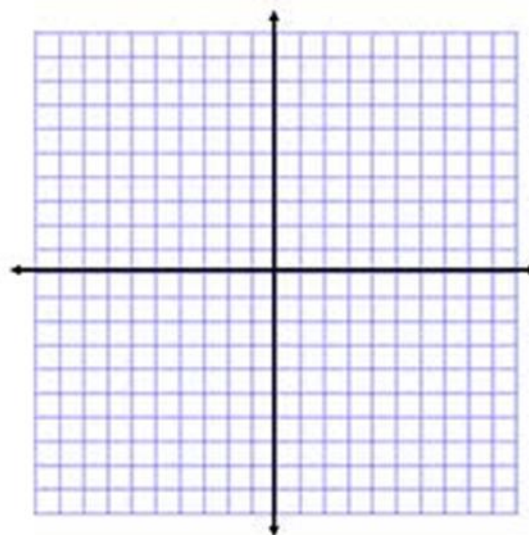
5.



Graph the following equation.

$$y = x + 4$$

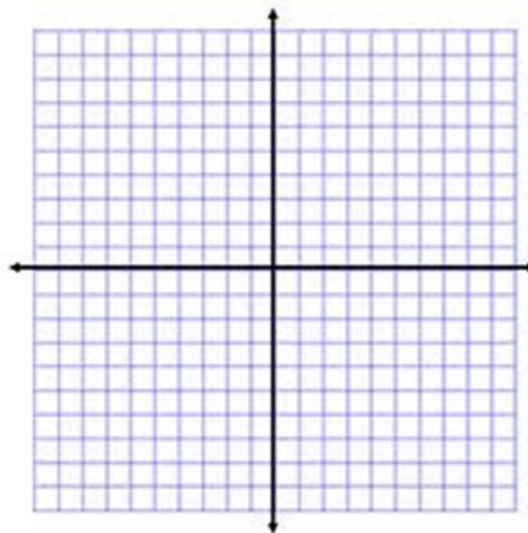
6.



Graph the following equation.

$$y = \frac{3}{4}x + 2$$

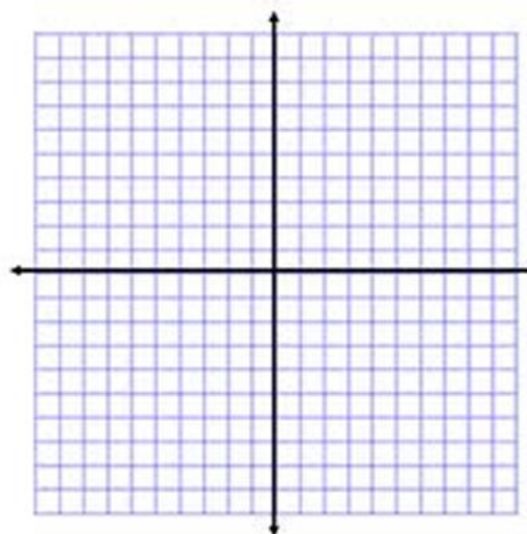
7.



Graph the following equation.

$$y = 4x - 9$$

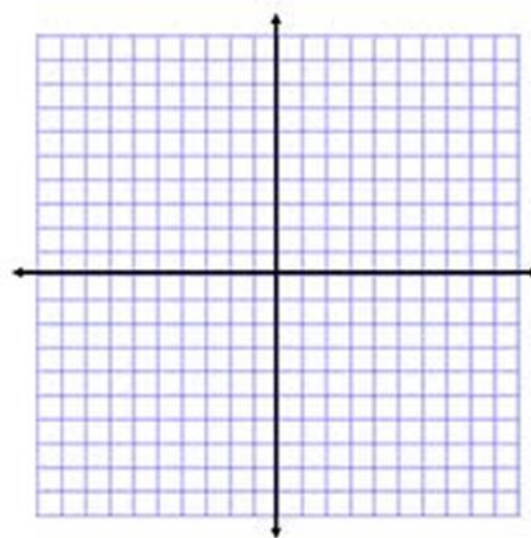
8.



Graph the following equation.

$$y = -\frac{3}{5}x - 2$$

9.



Graph the following equation.

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

10.

