5.2 Graph Using Intercepts

**Write your questions here!**

**x-intercept:**

**y-intercept:**

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**x-intercept:**

**y-intercept:**

---

**x-intercept:**

**y-intercept:**

---

**x-intercept:**

**y-intercept:**

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**STANDARD FORM**
Try it!

The graph shows the number of friends Mr. Brust has on Facebook over time.

What is the y-intercept?
What does the y-intercept mean?

What is the x-intercept?
What does the x-intercept mean?

Describe the rate of change.

SUMMARY:
5.2 Graph Using Intercepts

Identify the $x$-intercept and the $y$-intercept of the graph

1. $x$-intercept = 
   $y$-intercept =

2. $x$-intercept =
   $y$-intercept =

3. $x$-intercept =
   $y$-intercept =

Draw the line that has the given intercepts

4. $x$-intercepts: 3 
   $y$-intercepts: 5

5. $x$-intercepts: -5 
   $y$-intercepts: 6

6. $x$-intercepts: -2 
   $y$-intercepts: none

Find the $x$-intercept and the $y$-intercept of the graph of the equation.

7. $3x - 3y = 9$
   $x$-intercept =
   $y$-intercept =

8. $4x + y = 4$
   $x$-intercept =
   $y$-intercept =

9. $2x - 8y = 24$
   $x$-intercept =
   $y$-intercept =

Match the equation with its graph.

10. $2x - 6y = 6$
    A. 

11. $2x - 6y = -6$
    B. 

12. $2x - 6y = 12$
    C. 

Graph the equation. Label the points where the line crosses the axes.

<table>
<thead>
<tr>
<th>Equation</th>
<th>Graph</th>
</tr>
</thead>
<tbody>
<tr>
<td>$3x - 3y = 9$</td>
<td><img src="image1.jpg" alt="Graph" /></td>
</tr>
<tr>
<td>$4y = 12$</td>
<td><img src="image2.jpg" alt="Graph" /></td>
</tr>
<tr>
<td>$4x - 8y = 24$</td>
<td><img src="image3.jpg" alt="Graph" /></td>
</tr>
</tbody>
</table>

Is the point $(12, 9)$ on the line? **SHOW WORK!**

Is the point $(-8, 34)$ a solution? **SHOW WORK!**

Is the point $(10, -\frac{1}{2})$ on the line? **SHOW WORK!**

**SKILLZ REVIEW**

<table>
<thead>
<tr>
<th>Graph</th>
<th>Simplify</th>
<th>Solve</th>
</tr>
</thead>
</table>
| 1. Describe how to move from point A to point B.  
  _____ units in the $y$ direction (rise)  
  _____ units in the $x$ direction (run) | $3(2x - 5) + 5$ | $7 - \frac{x}{4} = 17$ |
| 2. Describe how to move from point C(0,3) to point D(2, -3). | $4x - 5(3x - 1)$ | $3x + 8 = 5x + 6$ |
Find the $x$-intercept and the $y$-intercept of the graph of the equation. Then graph it!

1. $3x - 5y = 18$

   $x$-intercept =

   $y$-intercept =

Use the graph to answer the following:

2. What does the $x$-axis represent?

3. What does the $y$-axis represent?

4. What is the $y$-intercept?

5. What does the $y$-intercept mean in this situation?

6. What is the $x$-intercept?

7. What does the $x$-intercept mean in this situation?

Use the graph to answer the following:

8. What does the $x$-axis represent?

9. What does the $y$-axis represent?

10. What is the $y$-intercept?

11. What does the $y$-intercept mean in this situation?

12. What is the $x$-intercept?

13. What does the $x$-intercept mean in this situation?
14. Mr. Brust has 90 Gummy AlgeBears and wants to eat them all in one sitting. After 2 minutes of continuous eating Mr. Brust has 75 Gummy AlgeBears left. After 12 minutes Mr. Brust has eaten all of the Gummy AlgeBears.

a. What is the \( x \)-intercept?

b. What is the \( y \)-intercept?

c. Draw the line with the given intercepts.
Label the \( x \) and \( y \) axes (include units!)

d. Describe the rate of change.

Using two variables, write an equation to represent the following.

15. The sum of two numbers is 50.

16. The total number of boys and girls is 428.

17. Sarah’s age increased by twice Bob’s age is 42.

18. A movie theater collected $290 selling adult tickets for $4 and children tickets for $2.

19. Kobe made some 3-pointers and some 2-pointers scoring 51 points.

20. Mr. Brust has a pocket full of quarters and dimes. He has $4.25 worth of coinage.

Use the table to determine the \( x \) and \( y \) intercepts.

21. | \( x \) | \( y \) |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>-2</td>
<td>24</td>
</tr>
<tr>
<td>-1</td>
<td>21</td>
</tr>
<tr>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>-3</td>
</tr>
</tbody>
</table>

\[ x \text{-intercept} = \]

\[ y \text{-intercept} = \]

22. | \( x \) | \( y \) |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>-4</td>
<td>-40</td>
</tr>
<tr>
<td>-2</td>
<td>-32</td>
</tr>
<tr>
<td>0</td>
<td>-24</td>
</tr>
<tr>
<td>2</td>
<td>-16</td>
</tr>
<tr>
<td>4</td>
<td>-8</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>10</td>
<td>16</td>
</tr>
</tbody>
</table>

\[ x \text{-intercept} = \]

\[ y \text{-intercept} = \]