



# Fontana Unified School District

Every Student Successful | Engaging Schools | Empowered Communities

## Offline Distance Learning

# Secondary



# Advanced Math 7

## May 2020

School Name: \_\_\_\_\_ Student ID#: \_\_\_\_\_

Math Teacher Name: \_\_\_\_\_

Period: \_\_\_\_\_



Advanced Math 7: May 4 – May 8  
 Concept: Solving Systems by Graphing

<p><b>Systems of linear equations</b></p> <ul style="list-style-type: none"> <li>- A set of two or more linear equations with the same variables</li> </ul> <p>Often, the system will be marked with brackets like above left example, but it is not required.</p> <ul style="list-style-type: none"> <li>- When you graph a linear system, you graph both lines on the same coordinate plane.</li> </ul>	<p><b>Solutions to systems of linear equations</b></p> <ul style="list-style-type: none"> <li>- A solution to a system of equations is an ordered pair that is true for both equations</li> <li>- When you graph a system, the solution is where the two lines intersect</li> </ul>
---	---

**One Solution**

- The system will have one solution when the lines cross exactly one time.

**Infinite Solutions**

- The system will have an infinite number of solutions when the lines are the same, or they touch at every point.

**No Solutions**

- The system will have no solutions if the lines never intersect at any point.

- Here, the solution is (15, 9) because that is where the lines intersect.

- These lines fall on top of each other, so there is an infinite number of solutions.
- These lines will have the same slope and the same intercept.

These lines will never intersect, so they have no solutions.

Ex.  $\begin{cases} y = 2x + 1 \\ y = 2x + 1 \end{cases}$   
 $\begin{cases} y = 2x + 1 \\ y = 2x + 2 \end{cases}$



Problems:

<p>1. Determine if <math>(\beta, 4)</math> is a solution to the system</p> $\begin{cases} 2T - F = 2 \\ T + 2U = 11 \end{cases}$	<p>2. Determine if <math>(3, -1)</math> is a solution to the system.</p> $\begin{cases} U = 3T + F \\ U = F - 2T \end{cases}$
<p>3. Identify the solution to the system.</p>          <p>The solution is ( _____ , _____ ).</p>	<p>4. Identify the solution to the system.</p>          <p>The solution is ( _____ , _____ ).</p>
<p>5. How many solutions do these systems of equations have? Justify how you know.</p>	<p>6. Describe the difference in the number of solutions between a system of linear equations that coincide and a system of linear equations that are parallel.</p>

7. Graph the system and identify the solution.

$$\begin{aligned}U &= F3 T+ 2 \\U &= 2 T F\end{aligned}$$

8. Graph the system and identify the solution.

$$\begin{aligned}2 T+ 2 U &= 6 \\4 T F U &= 12\end{aligned}$$

9. Graph the system and identify the solution.

$$\begin{aligned}U &= 3 T F2 \\U &= 3 T+ 2\end{aligned}$$

10. Graph the system and identify the solution.

$$\begin{aligned}U &= F2 T+ 1 \\2 U &= F4 T+ 2\end{aligned}$$

AQs3.4 (van3.4 (c)4 (1 (c)4 (1 (c)4 (J</MCID 0 >>BDC /CS0 cs 0 scn /TT





### Infinite Solutions Example

$$U = 2T + F$$

$$2U = 4T + F$$

$$2(2T + F) = 4T + F$$

$$4T + F = 4T + F$$

$$F = F$$

There is an infinite number of solutions.

### No Solutions Example

$$2T + F + U = 7$$

$$2T + F + U = 3$$

I subtract the two equations to eliminate the variables

$$0 = 4$$

0 does not equal 4. There are no solutions.

Recap:



Problems:

<p>1. Some systems of two linear equations in two variables have a single solution (x, y). Others have no solutions, while still others have an infinite number of solutions.</p> <p>Match each description to number of solutions.</p> <p>Parallel lines _____</p> <p>Intersecting lines _____</p> <p>Coinciding lines _____</p> <div style="border: 1px solid black; padding: 5px; display: inline-block;"> <p>- Single solution</p> <p>- No solution</p> <p>- Infinite solution</p> </div>	<p>2. When solving systems algebraically, how many solutions will each system have when solve for a variable and see this:</p> <p><math>x = 1</math> _____</p> <p><math>2 = 2</math> _____</p> <p><math>-1 = 5</math> _____</p>
<p>3. Using substitution, solve the system.</p> $\begin{aligned} T + 2U &= 18 \\ T &= 4U \end{aligned}$	<p>4. Using substitution, solve the system.</p> $\begin{aligned} T &= 3U - 2 \\ 2T + U &= 10 \end{aligned}$
<p>5. Using elimination, solve the system.</p> $\begin{aligned} 5T + 2U &= 26 \\ FT - 2U &= F22 \end{aligned}$	<p>6. Using elimination, solve the system.</p> $\begin{aligned} 6T + 6U &= 28 \\ 3T + 3U &= 14 \end{aligned}$

<p>7. Which method makes more sense to solve system? Why?</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>8. Solve the system with your chosen method</p>
<p>9. Which method makes more sense to solve system? Why?</p> <p style="text-align: center;"><math>U = 4T</math> <math>U = 4T + 7</math></p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>10. Solve the system with your chosen method</p> <p style="text-align: center;"><math>U = 4T</math> <math>U = 4T + 7</math></p>
<p>11. Solve the system with any method.</p>	<p>12. Solve the system with any method.</p> <p style="text-align: center;"><math>T + U = 14</math> <math>3T + U = 36</math></p>