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| **Substitution**  Find the solutions of the following equations:  y – 30 = 12x  y =x2 + 11x -12 |

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**Example 1:** Find the solutions of the following equations:

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y =x2 + 11x -12

**Step 1:** Write a single equation containing only one variable

**Step 2:** Factor and solve for x.

**Step 3:** Substitute x’s back into one equation and find corresponding y-values.

**Step 4:** Write solutions as ordered pairs.

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| **Elimination**  Since opening day, attendance at Pool A has increased steadily, while attendance at Pool B first rose and then fell. Equations modeling the daily attendance y at each pool are shown below, where x is the number of days since opening day. On what day(s) was the attendance the same at both pools? What was the attendance?  Pool A: y = 20x + 124  Pool B: y = - x2 + 39x + 64 |

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Pool A: y = 20x + 124

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**Step 1:** Eliminate y

**Step 2:** Factor and Solve for x

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| **Graphing**  Find the solutions of the following equations:  y = x2 – x – 2  y = -x + 2 |

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**Example 3:** Find the solutions for each equation:

y = x2 – x – 2

y = -x + 2

**Step 1:** Calculate additional points for each equation

|  |  |  |
| --- | --- | --- |
| x | y = x2 – x – 2 | y = - x + 2 |
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**Step 2:** Graph each equations.

**Step 3:** Find intersections.

**Example 4:** Find the solutions using a graphing calculator.

y = 2x2 – 24x + 76

y + 7 = 11

**Example 3:** Find the solutions for each equation:

y = x2 – x – 2

y = -x + 2

**Step 1:** Calculate additional points for each equation

|  |  |  |
| --- | --- | --- |
| x | y = x2 – x – 2 | y = - x + 2 |
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**Step 2:** Graph each equations.

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**Example 4:** Find the solutions using a graphing calculator.

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