

## Looking Ahead: Algebra 2 Units 2 &amp; 3

The questions below are examples of the type of questions you'll see on your **Semester 1 Final**, **Semester 2 Final**, and the **CST**. This is how these tests will ask you to apply your skills from **Units 2 & 3**, as well as your common sense math skills. They are structured in a way that is deliberately complicated, but the skills are the same as what you have learned up to this point.

**Semester 1 Final Examples**

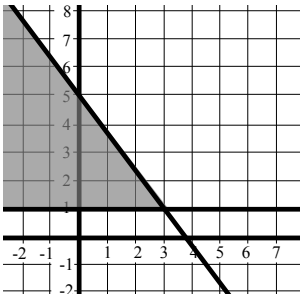
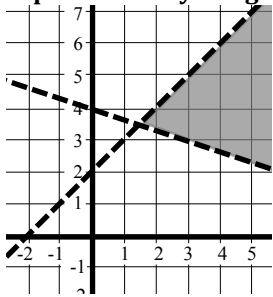
1.	Graph the system of equations. $\begin{cases} -3x + 4y = 12 \\ 7x + 3y = 21 \end{cases}$	5.	Solve the system. $\begin{cases} 5x + 3y = 16 \\ -x - 3y = -8 \end{cases}$
2.	Graph the solution to the following inequality. $ 5 - 2x  \geq 11$	6.	Determine the number of solutions for the system. $\begin{cases} -3x + 5y = 2 \\ -15y + 9x = 12 \end{cases}$
3.	Graph the inequality. $y > -\frac{3}{4}x + 1$	7.	Solve the system of equations. $\begin{cases} 6x + 5y + 2z = -4 \\ -3x + 7y - 6z = -4 \\ 8x + 9y + 4z = 6 \end{cases}$ A. (-3, 2, 2)      B. (-4, 2, 5) C. (4, -2, -5)      D. (4, 8, 8)
4.	Solve the system. $\begin{cases} y = -3x + 1 \\ 5x + y = 7 \end{cases}$	8.	Given the equation $y = x + n$ , where $x > 0$ and $0 < n < 1$ , which statement is valid for the real values of $y$ ? A. $y < x$ B. $y = x$ C. $y > x$ D. $y < 0$

**Semester 2 Final Examples**

9.	Solve the system of equations. $\begin{cases} 6x + 2y = 38 \\ -3x + 5y = -31 \end{cases}$	10.	Write as a fraction in its simplest form. 0.3666666666666666... A. $\frac{3}{8}$ B. $\frac{33}{90}$ C. $\frac{11}{30}$ D. $\frac{30}{80}$
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**CST Examples**

11.	<b>What is the complete solution to the equation</b> $ 14 - 7x  = 35$ ? A $x = -3$ $x = 7$ B $x = 3$ $x = -7$ C $x = 3$ $x = 7$ D $x = -3$ $x = -7$	13.	<b>What are the possible values of <math>x</math> in</b> $ 11 - 5x  = 10$ ? A $x = 0.2$ $x = 4.2$ B $0.2 < x < 4.2$ C $-0.2 > x > -4.2$ D $x = -0.2$ $x = -4.2$
12.	<b>What point lies in the solution set for the system</b> $\begin{cases} 5y - 2x > 7 \\ -5y + x \leq 7 \end{cases}$ A (3, 2) B (-2, -6) C (5, 9) D (2, 1)	14.	<b>What is the solution to the following system of equations?</b> $\begin{cases} 5x + 3y = -9 \\ 4x - 6y = -24 \end{cases}$ A (2, -3) B (-3, 2) C (6, -8) D (-8, 6)

<p>15. For a party, Taryn bought several dozen sodas and several dozen balloons. The sodas cost \$4 dollars per dozen, and the balloons cost \$11 per dozen. Taryn bought a total of 6 dozen items and paid a total of \$38. How many balloons did she buy?</p> <p>A 1 dozen B 2 dozen C 3 dozen D 4 dozen</p>	<p>18. A store manager bought 5 boxes of doughnuts. Some boxes contained 6 doughnuts each, and the rest contained 12 doughnuts each. There were 36 doughnuts in all. How many packages of 12 doughnuts did she buy?</p> <p>A 4 B 3 C 2 D 1</p>
<p>16. What system of inequalities <i>best</i> represents the graph shown below?</p>  <p>A <math>y \leq 1</math> and <math>y \leq -\frac{4}{3}x + 5</math> B <math>y \geq 1</math> and <math>y \leq -\frac{4}{3}x + 5</math> C <math>y \geq 1</math> and <math>y \geq -\frac{4}{3}x + 5</math> D <math>y \leq 1</math> and <math>y \geq -\frac{4}{3}x + 5</math></p>	<p>19. Which system of linear inequalities is represented by the graph?</p>  <p>A <math>\begin{cases} y &gt; x + 2 \\ y &lt; -3x + 4 \end{cases}</math> B <math>\begin{cases} y &lt; x + 2 \\ y - 3x &lt; 4 \end{cases}</math> C <math>\begin{cases} x + y &gt; 2 \\ y &gt; \frac{1}{3}x + 4 \end{cases}</math> D <math>\begin{cases} y - x &lt; 2 \\ y &gt; -\frac{1}{3}x + 4 \end{cases}</math></p>
<p>17. What is the solution to the system of equations shown below?</p> $\begin{cases} -4x + 2y + 8z = 10 \\ 2x - y - 4z = -5 \\ 8x - 4y - 16 = -20 \end{cases}$ <p>A (-3, 3, 1) B <math>(-1, -2, \frac{1}{4})</math> C no solution D infinitely many solutions</p>	<p>20. There are two numbers with the following properties.</p> <ol style="list-style-type: none"> <li>The first number is 5 less than the second number.</li> <li>The sum of the two numbers is 23 less than their product.</li> </ol> <p>Which of the following represents possible values of these two numbers?</p> <p>A -8, -3 B 3, 8 C -7, -2 D 2, 7</p>