**ALGEBRA 2 - DAY ONE!**

**Circuit Style:** Start your brain training in Cell #1, search for your answer. Label that block as Cell #2 and continue to work until you complete the entire exercise for your Algebra 2 Brain Training.

<table>
<thead>
<tr>
<th>Cell #1</th>
<th>Answer: ( y = \frac{1}{2}x - 7 )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Find the slope of the line containing the points (5, – 4) and (– 3, – 6).</td>
</tr>
<tr>
<td></td>
<td>[ \text{Simplify, no negative exponents.} ]</td>
</tr>
<tr>
<td></td>
<td>[ \frac{-45x^6y^2}{9x^3y^7} ]</td>
</tr>
<tr>
<td></td>
<td>Factor Completely: ( 2x^3 - 2x^2 - 24x )</td>
</tr>
<tr>
<td></td>
<td>[ \text{Write the equation of a line with a slope of } 3 \text{ and passing through the point } (-5, -7). ]</td>
</tr>
<tr>
<td></td>
<td>[ \text{Solve for } y: \ 2x + 3y = 12 ]</td>
</tr>
<tr>
<td></td>
<td>[ \text{Solve by the addition method.} ]</td>
</tr>
<tr>
<td></td>
<td>[ \begin{cases} 2x + y = 13 \ 3x - y = 7 \end{cases} ]</td>
</tr>
<tr>
<td></td>
<td>[ \text{Write an equation of the line containing the point } (6, -4) \text{ and perpendicular to the line } y = -2x - 3. ]</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Answer: $8x^2 - x + 1$</th>
<th>Answer: $\frac{-5x^3}{y^5}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiply: $(2x + 1)(x^2 - 3x - 2)$</td>
<td>Factor completely: $2x^2 + 7x - 15$</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Answer: $y = -\frac{2}{3}x + 4$</th>
<th>Answer: $2x - 3y \leq 12$</th>
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<tbody>
<tr>
<td>Simplify: $3(2x - y) - (5x + 4y - 2)$</td>
<td>Solve: $4</td>
</tr>
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</table>

<table>
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<tr>
<th>Answer: $2x^2y^2\sqrt{5}$</th>
<th>Answer: $y = 3x + 8$</th>
</tr>
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<tbody>
<tr>
<td>Solve by factoring: $x^2 + 4x - 21 = 0$</td>
<td>Subtract: $(6x^2 - 4x + 3) - (2 - 3x - 2x^2)$</td>
</tr>
</tbody>
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<tr>
<th>Answer: $2x(x + 3)(x - 4)$</th>
<th>Answer: $x - 7y + 2$</th>
</tr>
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<tr>
<td>Write the inequality:</td>
<td>Multiply: $(x + 3y)(x - 2y)$</td>
</tr>
</tbody>
</table>
#1
Answer: \( y = \frac{1}{2}x - 7 \)
Find the slope of the line containing the points \((5, -4)\) and \((-3, -6)\).

#5
Answer: \( x^2 + xy - 6y^2 \)
Simplify, no negative exponents.
\[
-\frac{45x^6y^2}{9x^3y^7}
\]

#10
Answer: \( 2x^3 - 5x^2 - 7x - 2 \)
Factor Completely: \( 2x^3 - 2x^2 - 24x \)

#14
Answer: \( (4, 5) \)
Multiply and simplify:
\[
\sqrt{10x^2y^3} \cdot \sqrt{2x^2y}
\]

#7
Answer: \( (2x - 3)(x + 5) \)
Write the equation of a line with a slope of 3 and passing through the point \((-5, -7)\).

#2
Answer: \( \frac{1}{4} \)
Solve for \( y \): \( 2x + 3y = 12 \)

#13
Answer: \( -9 \leq x \leq 3 \)
Solve by the addition method.
\[
\begin{align*}
2x + y &= 13 \\
3x - y &= 7
\end{align*}
\]

#16
Answer: \( \{-7, 3\} \)
Write an equation of the line containing the point \((6, -4)\) and perpendicular to the line \( y = -2x - 3 \).

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Answer: \(8x^2 - x + 1\)
Multiply: \((2x + 1)(x^2 - 3x - 2)\)

Answer: \(-\frac{5x^3}{y^5}\)
Factor completely: \(2x^2 + 7x - 15\)

Answer: \(y = -\frac{2}{3}x + 4\)
Simplify: \(3(2x - y) - (5x + 4y - 2)\)

Answer: \(2x - 3y \leq 12\)
Solve: \(4|x + 3| \leq 24\)

Answer: \(2x^2y^2\sqrt{5}\)
Solve by factoring: \(x^2 + 4x - 21 = 0\)

Answer: \(y = 3x + 8\)
Subtract: \((6x^2 - 4x + 3) - (2 - 3x - 2x^2)\)

Answer: \(2x(x + 3)(x - 4)\)
Write the inequality:

Answer: \(x - 7y + 2\)
Multiply: \((x + 3y)(x - 2y)\)