Before Class:

☐ Read the objectives on page 92.

☐ Read the Helpful Hint box on page 94.

☐ Complete the exercises:

1. The __________________________ property of __________________________ guarantees that adding the same number to both sides of an equation does not change the solution of the equation.

2. To solve an equation, does it matter which side of the equal sign the variable is on?

During Class:

☐ Write your class notes. Neatly write down all examples shown as well as key terms or phrases with definitions. If not applicable or if you were absent, watch the Lecture Series (DVD) for this section and do the same (write down the examples shown as well as key terms or phrases). Insert more paper as needed.

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Answers: 1) addition; equality  2) no
Section 2.2 The Addition Property of Equality

Class Notes (continued)          Your Notes

(Insert additional paper as needed.)
Section 2.2 The Addition Property of Equality

Practice:

☐ Complete the Vocabulary and Readiness Check on page 97.

☐ Next, complete any incomplete exercises below. Check and correct your work using the answers and references at the end of this section.

Review this example:
1. Solve $5t - 5 = 6t + 2$ for $t$.

We first want all terms containing $t$ on one side of the equation and all other terms on the other side of the equation. To do this, first subtract $5t$ from both sides of the equation.

\[ 5t - 5 = 6t + 2 \]
\[ 5t - 5 - 5t = 6t + 2 - 5t \]
\[ -5 = t + 2 \]

Next, subtract 2 from both sides.

\[ -5 = t + 2 \]
\[ -5 - 2 = t + 2 - 2 \]
\[ -7 = t \]

Check the solution, $-7$, in the original equation. The solution is $-7$.

Your turn:
2. Solve: $3x - 6 = 2x + 5$

Review this example:
3. Solve: $2x + 3x - 5 + 7 = 10x + 3 - 6x - 4$

First simplify both sides of the equation.

\[ 2x + 3x - 5 + 7 = 10x + 3 - 6x - 4 \]
\[ 5x + 2 = 4x - 1 \]

Next, we want all terms with a variable on one side of the equation and all numbers on the other side.

\[ 5x + 2 - 4x = 4x - 1 - 4x \]
\[ x + 2 = -1 \]
\[ x + 2 - 2 = -1 - 2 \]
\[ x = -3 \]

Check:

\[ 2x + 3x - 5 + 7 = 10x + 3 - 6x - 4 \]
\[ 2(-3) + 3(-3) - 5 + 7 = 10(-3) + 3 - 6(-3) - 4 \]
\[ -6 - 9 + 7 = -30 + 3 + 18 - 4 \]
\[ -13 = -13 \]

The solution is $-3$.

Your turn:
4. Solve: $13x - 9 + 2x - 5 = 12x - 1 + 2x$
### Review this example:
5. Solve: \(6(2a - 1) - (11a + 6) = 7\)

\[
\begin{align*}
6(2a - 1) - 1(11a + 6) &= 7 \\
6(2a) + 6(-1) - 1(11a) - 1(6) &= 7 \\
12a - 6 - 11a - 6 &= 7 \\
a - 12 &= 7 \\
a - 12 + 12 &= 7 + 12 \\
a &= 19
\end{align*}
\]

Check by replacing \(a\) with 19 in the original equation.

### Your turn:
6. Solve: \(15 - (6 - 7k) = 2 + 6k\)

### Review this example:
7. The sum of two numbers is 8. If one number is \(x\) write an expression representing the other number.

If the sum of two numbers is 8 and one number is \(x\) we find the other number by subtracting \(x\) from 8. The other number is represented by \(8 - x\).

### Your turn:
8. Two numbers have a sum of 20. If one number is \(p\), express the other number in terms of \(p\).

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<td>8</td>
<td>(20 - p)</td>
<td>Sec 2.2, Ex 65</td>
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☐ **Next, insert your homework.** Make sure you attempt all exercises asked of you and show all work, as in the exercises above. Check your answers if possible. Clearly mark any exercises you were unable to correctly complete so that you may ask questions later. **DO NOT ERASE YOUR INCORRECT WORK. THIS IS HOW WE UNDERSTAND AND EXPLAIN TO YOU YOUR ERRORS.**