Today I will be able to solve multi-step literal equations
Bellwork:
(A)
Evaluate for the given variable:

\(-x^2 + 3 \; ; \; x = 2\)

\(-(2)^2 + 3\)

\(-4 + 3\)

\(-1\)

(B)
Simplify: \(3x^2 \; \cdot \; 5x^4\)

a) \(15x^8\)  

b) \(8x^6\)  

c) \(15x^6\)  

d) \(8x^8\)

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DAILY SHEET 1.1 ANSWERS

1. 16
2. 16
3. 12 - 5x
4. 9a +2b
5. 5x +7y +2
6. Answers may vary
7. Did not distribute correctly. Should be
   2x + 8 - 5x + 7
   - 3x +15
8. a) x = -12    b) x = -3
    c) x = 6      d) x = 11

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1.2 Solving multi step and literal equations

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Write an example of an algebraic equation:

\[ 5x + 5 = 10 \]

Write an example of an algebraic expression:

\[ 3x + y \]
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Example 1: Solve each equation

\[ 2n + 7 = -21 \]
\[ -7 \]
\[ \frac{2n}{2} = \frac{-28}{2} \]
\[ n = -14 \]

\[ -b + 13 = 17 \]
\[ -13 \]
\[ -b = 4 \]
\[ b = -4 \]

\[ \frac{n}{8} - 4 = -7 \]
\[ +4 +4 \]
\[ \frac{n}{8} = -3.8 \]
\[ n = -24 \]

\[ 3 \cdot \frac{x+2}{3} = 4.3 \]
\[ x+2 = 12 \]
\[ -2 -2 \]
\[ x = 10 \]
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\[
-27 + 6y = 3(y - 3)
\]

\[
-27 + 6y = 3y - 9
\]

\[
-18 + 3y = 3y
\]

\[
-18 = -3y
\]

\[
\frac{-18}{-3} \Rightarrow \frac{-3y}{-3} = 6 = y
\]

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

\[
4a + 6 = -2(a - 12)
\]

\[
4a + 6 = -2a + 24
\]

\[
+2a + 2a
\]

\[
6a + 6 = 24
\]

\[
-6 - 6
\]

\[
6a = 18
\]

\[
\frac{6a}{6} \Rightarrow \frac{18}{6} = a
\]

\[
a = 3
\]
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Example 2: Solving Literal Equations

What is a literal equation?

4x + 4y = 20, for y

Get the given variable by itself on one side of the =

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\[\frac{y-b}{x} = \frac{y-b}{x}\]

\[3x + y = 6, \text{ for } y\]

\[-3x\]

\[y = 6 - 3x\]

\[x - 3y = 7, \text{ for } x\]

\[+3y + 3y\]

\[x = 7 + 3y\]

\[y = mx + b, \text{ for } b\]

\[\frac{y-b}{x} = m\]

\[\frac{y-b}{x} = \frac{y-b}{x}\]

\[y = mx + b, \text{ for } m\]

\[\frac{y-b}{x} = \frac{y-b}{x}\]
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$4x + 4y = 20$, for $x$

$3x + y = 6$, for $x$

$x - 3y = 7$, for $y$
Example 3: Writing and Solving Equations

Jaren wants to buy a new phone, but his mom said he has to pay for it. He makes $10.50 an hour at his job. His sister said she would give him $10 if he did her chores for the week. If he does his sisters chores, and the phone he wants costs $700, write and solve an equation to figure out how many hours Jaren will have to work to have enough money to buy the phone.

\[
\begin{align*}
10.50h + 10 &= 700 \\
10.50h &= 690 \\
h &= \frac{690}{10.50} \\
h &= 65.7 \\
\end{align*}
\]

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A state park charges admission of $6 per person plus $3 for parking. Jo paid $27 when her car entered the park. Write and solve an equation to find the number of people in Jo’s car.

\[ 6p + 3 = 27 \]

\[ \frac{27 - 3}{6} = p \]

\[ \frac{24}{6} = p \]

\[ p = 4 \]
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SUMMARY:

Today we learned about

__________________________________________________________

_____________________.

If I had to rate my understanding of today’s lesson I would give myself a _________ (1, 2, 3 or 4) because

_______________________________.

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