UNIT REVIEW

1. Solve each of the following equations.

<p>| | | |</p>
<table>
<thead>
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<tbody>
<tr>
<td>a) (-4n = -16)</td>
<td>[\frac{-4n}{-4} = \frac{-16}{-4}]</td>
<td>[n = 4]</td>
</tr>
<tr>
<td>b) (x - 9 = 17)</td>
<td>[x = 26]</td>
<td>[add (-9) to both sides]</td>
</tr>
<tr>
<td>c) (-2x + 4 = 14)</td>
<td>[\frac{-2x}{-2} + \frac{4}{-2} = \frac{14}{-2}]</td>
<td>[x = -5]</td>
</tr>
<tr>
<td>d) (5x + 3x - 16 - 2x + 20 = 4x + x - 30)</td>
<td>[-5x]</td>
<td>[add (-5x) to both sides]</td>
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<tr>
<td>e) (3(x - 1) - 2(x + 1) = 5x)</td>
<td>[\frac{3x - 3 - 2x - 2}{2} = \frac{5x}{2}]</td>
<td>[x - 5 - x = 5x - x]</td>
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<tr>
<td>f) ((x - 2) - (x + 1) = -5(2x - 1))</td>
<td>[\frac{x - 2 - x - 1}{-5} = \frac{-10x + 5 - 5}{-5}]</td>
<td>[-\frac{8}{-5} = \frac{-10x}{-5}]</td>
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<tr>
<td>g) (\frac{3x}{5} - \frac{2x}{3} = 2)</td>
<td>[\text{LCD} = 15]</td>
<td>[3(3x) - 15(2x) = 15(2)]</td>
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<tr>
<td>h) (\frac{(x - 2) - (x - 2)}{6} = 2)</td>
<td>[\text{LCD} = 30]</td>
<td>[\frac{6}{5} (x - 2) - \frac{6}{5} (x - 2) = 30]</td>
</tr>
</tbody>
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\[
\begin{align*}
9x - 10x &= 30 \\
- \frac{x}{-1} &= \frac{30}{-1} \\
\boxed{x &= -30}
\end{align*}
\]
2) You can convert from Fahrenheit to Celsius degrees by using the formula: \( F = 2(C + 15) \).

a) Solve for \( C \):
\[
\begin{align*}
\frac{F - 30}{2} &= \frac{2C}{2} + 30 \\
\frac{F - 30}{2} &= C
\end{align*}
\]

\( F = 2(C + 15) \) distribute 2 over
\( F = 2C + 30 \)
\( \frac{F - 30}{2} = C \)

\[
\begin{align*}
\frac{F - 30}{2} &= \frac{2C}{2} + 30 \\
\frac{F - 30}{2} &= C
\end{align*}
\]

b) What is \( 81^\circ F \) converted to \( ^\circ C \)?
\[
\begin{align*}
C &= \frac{F - 30}{2} \\
C &= \frac{81 - 30}{2} \\
C &= \frac{51}{2} \\
\therefore \text{It's } 25.5^\circ C
\end{align*}
\]

3) Determine the length of each side of a triangle if the sides are: \( x \), \( x + 7 \), and \( 2x - 5 \) and the perimeter is 18cm.

[Write your 'let statements', an equation, and show your work.]

Consider drawing a diagram.

\[
\begin{align*}
x + x + 7 + 2x - 5 &= 18 \\
4x + 2 &= 18 \\
4x &= 16 \\
\therefore \text{Sides are } 4, 11 \text{ and } 3
\end{align*}
\]

4) Julie solved two equations. In each she made an error. Identify her error and explain what she did wrong.

\[
\begin{align*}
3x + 5 &= -2 \\
\text{It was supposed to } -5 \\
x + 4 &= +2x - 7 \\
-2x &= -2x \\
\text{switched the sign to } +
\end{align*}
\]

a. \[
\begin{align*}
3x &= 3 \\
\div 3 &= \div 3 \\
x &= 1
\end{align*}
\]

b. \[
\begin{align*}
-3x &= 3 \\
\div -3 &= \div -3 \\
x &= -1
\end{align*}
\]

COMPLETE: Textbook p.230 #1, 2, 5, 7, 9 and 11(ad), CP, p.28 #1abc, 3ac, 4c and p.29 #1k, 3bd