Quiz #3

1) \[ \frac{2}{5}x - \frac{3}{2}x = \frac{3}{4}x + 3 \]
   Multiply by 20
   \[ 8x - 30x = 15x + 60 \]
   \[ -22x = 15x + 60 \]
   \[ -37x = 60 \]
   \[ x = -\frac{60}{37} \]

2) \[ 5(b - 7) = 3(b - 2) + 2b \]
   \[ 5b - 35 = 3b - 6 + 2b \]
   \[ 5b - 35 = 5b - 6 \]
   \[ -35 = -6 \]
   No Solution
2.5 Word Problems!

The sum of three consecutive page numbers is 105. Find the numbers.

Word equation:
First + Second + Third = 105

\[ x + (x+1) + (x+2) = 105 \]

\[ 3x + 3 = 105 \]
\[ 3x = 102 \]
\[ x = 34 \]

34, 35, and 36
In 2005, Americans spent a total of $26 billion to remodel bathrooms and kitchens. They spent $5 billion more on kitchens than on bathrooms. How much was spent on each?

Word Equation

\[ \text{Kitch. + Bath} = 26 \]

\[ x + 5 + x = 26 \]

\[ 2x + 5 = 26 \]

\[ 2x = 21 \]

\[ x = \frac{21}{2} \]

$10.5 billion on bathrooms

$15.5 billion on kitchens
In 2006, approximately 125 billion e-mail messages were sent each day. The number of spam messages was about four times the number of non-spam messages. How many of each type of message were sent each day in 2006?

**Examples**

<table>
<thead>
<tr>
<th>Spam</th>
<th>Not Spam</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>68</td>
<td>17</td>
</tr>
<tr>
<td>4x</td>
<td>x</td>
</tr>
</tbody>
</table>

**Word equation**

\[
\text{Spam} + \text{Not Spam} = 125
\]

\[
4x + x = 125
\]

\[
\text{etc...}
\]
Additional Key Words and facts:

- "Perimeter" means: "Distance Around"

- "Complementary" angles $A + B = 90^\circ$
- "Supplementary" angles $A + B = 180^\circ$

- Consecutive odd $\cdots, x, x+1, x+2, \cdots$
- Consecutive even $\cdots, x, x+2, x+4, \cdots$

- Angles in a triangle $\triangle ABC$: $A + B + C = 180^\circ$

- Interest $I = P \cdot r \cdot t$
  
  $\uparrow\uparrow\downarrow$

  Principal  rate  time