Solve each Problem. Show all work on test.

**Problem 1.** Larry is three years older than twice Moe’s age. Curly is two years older than Moe. Two years ago, the sum of Larry’s and Moe’s age was four more than double Curly’s age. What is their present ages.

<table>
<thead>
<tr>
<th>Names</th>
<th>Ages</th>
<th>– 2 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Larry</td>
<td>$2m + 3$</td>
<td>$2m + 1$</td>
</tr>
<tr>
<td>Curly</td>
<td>$m + 2$</td>
<td>$m$</td>
</tr>
<tr>
<td>Moe</td>
<td>$m$</td>
<td>$m - 2$</td>
</tr>
</tbody>
</table>

\[
\text{Larry} + \text{Moe} = 2[\text{Curly}] + 4 \\
2m + 1 + m - 2 = 2m + 4 \\
3m - 1 = 2m + 4 \\
3m - 2m = 4 + 1 \\
m = 5
\]

Larry = 13  
Curly = 7  
Moe = 5

**Problem 2.** Austin is 7 years younger than Ramiah. Six years from now, the sum of their ages will be 91. How old is each now? What is their present ages.

<table>
<thead>
<tr>
<th>Names</th>
<th>Ages</th>
<th>+6 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austin</td>
<td>R - 7</td>
<td>R - 1</td>
</tr>
<tr>
<td>Ramiah</td>
<td>R</td>
<td>R + 6</td>
</tr>
</tbody>
</table>

\[
\text{Ramiah} + \text{Austin} = 91 \\
R + 6 + R - 1 = 91 \\
2R + 5 = 91 \\
2R = 86 \\
R = 43
\]

Austin = 36  
Ramiah = 43
Problem 3. Find three consecutive odd integers so that five times the second, decreased by twice the third, is equal to fifty-three. Find the integers.

First: \(2n + 1\)
Second: \(2n + 3\)
Third: \(2n + 5\)

\[
5(\text{Second}) - 2(\text{Third}) = 53
\]

\[
5(2n + 3) - 2(2n + 5) = 53
\]

\[
10n + 15 - 4n - 10 = 53
\]

\[
6n + 5 = 53
\]

\[
6n = 53 - 5
\]

\[
6n = 48
\]

\[
n = 8
\]

First: 17
Second = 19
Third = 21

Problem 4. Find three consecutive even integers such that twice the sum of the first and third integers is twenty-one more than the second integer.

First: \(2n\)
Second: \(2n + 2\)
Third: \(2n + 4\)

\[
2(\text{First} + \text{Third}) = \text{Second} + 21
\]

\[
2(2n + 2n + 4) = 2n + 2 + 21
\]

\[
2(4n + 4) = 2n + 23
\]

\[
8n + 8 = 2n + 23
\]

\[
8n - 2n = 23 - 8
\]

\[
6n = 15
\]

\[
n = 2\frac{1}{2}
\]

\[
\{ } \}
Problem 5. Twice a number increased by twelve, is thirty five less than three times the number. Find the number.

\[
\begin{align*}
\text{Number: } & \quad Y \\
2y + 12 &= 3y - 35 \\
12 + 35 &= 3y - 2y \\
47 &= y
\end{align*}
\]

Number = 47

Problem 6. The sum of two integers is thirty. Eight times the smaller integer is six more than five times the larger integer. Find the numbers.

One: \quad x \\
Other: \quad 30 - x

\[
\begin{align*}
8 \text{ (One)} &= 5 \text{ (Other)} + 6 \\
8x &= 5(30 - x) + 6 \\
8x &= 150 - 5x + 6 \\
8x &= 156 - 5x \\
8x + 5x &= 156 \\
13x &= 156 \\
x &= 12
\end{align*}
\]

One = 12

Other = 18
Problem 7. Pixie dust worth $1.95/g is mixed with leprechaun gold worth $2.25/g to make a 200g mixture of magical treasure worth $436.50. **How many grams of each ingredient are used?**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Amount (g)</th>
<th>Price $</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pixie Dust</td>
<td>x</td>
<td>1.95</td>
<td>1.95x</td>
</tr>
<tr>
<td>Leprechaun Gold</td>
<td>200 – x</td>
<td>2.25</td>
<td>450-2.25x</td>
</tr>
<tr>
<td>Treasure</td>
<td>200</td>
<td></td>
<td>436.50</td>
</tr>
</tbody>
</table>

Total Pixie Dust + Total Leprechaun Gold = Total Treasure

\[
1.95x + 450 - 2.25x = 436.50
\]
\[
-.3x + 450 = 436.50
\]
\[
-.3x = 436.50 - 450
\]
\[
-.3x = -13.5
\]
\[
-.3x = -13.5
\]
\[
x = 45
\]

Pixie Dust = 45g

Lep. Gold = 155g

Problem 8. Fifty kilograms of oats worth 90¢/kg is added with some corn worth 60¢/kg to make some animal feed worth 75¢/kg. **How many kilograms of corn** were used in the mixture?

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Amount kg</th>
<th>Price $</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oats</td>
<td>50</td>
<td>.90</td>
<td>45.00</td>
</tr>
<tr>
<td>Corn</td>
<td>x</td>
<td>.60</td>
<td>.60x</td>
</tr>
<tr>
<td>Feed</td>
<td>x + 50</td>
<td>.75</td>
<td>.75x + 37.50</td>
</tr>
</tbody>
</table>

Total Oats + Total Corn = Total Feed

\[
45 + .60x = .75x + 37.5
\]
\[
45 - 37.5 = .75x - .60x
\]
\[
7.5 = .15x
\]
\[
7.5 = .15x
\]
\[
.15 = .15
\]
\[
50 = x
\]

Corn = 50 kg