Problem 1

Let x= larger integer, y= smaller integer

Equation 1: x+1= 2y

Equation 2: x+y= 32

By using substitution method

X + 1= 2Y

x= 2y - 1

Plugging in x from equation 1 in 2nd equation so we get,

2Y – 1 + Y = 32

3y= 33

**Y=11**

Now plugging in y value in any of the above equation so we get,

X= 32 – 11

**X= 21**

Check: as X + Y= 32

So plugging in the equation

21 + 11 = 32

Problem 2

Let x be the integer

2x + 3= 5x – 6

3 + 6= 5x – 2x

**X= 3**

Problem 3

Lt X, Y, Z be the integers

2x = Z +10

The list of even integers ..10,12,14,16,18,…

**Suppose x= 14 so then y= 16 and z= 18**

If we check in the equation above

2(14) = 28 which is 10 more than z which is 18.

Problem 4

Let X and Y be the integers

Equation 1: x + y = 37

Equation 2: x – 1 = 2y

From Equation 2, x = 2y +1

By substituting into equation 1 we get,

3y = 36

**Y = 12**

Plugging in y=12 in any equation above

X + 12= 37

**X= 25** which satisfies the condition in the problem

Problem 5

X + y= 25, Equation 1

2x – 1= 1+ 4y, Equation 2

As x = 25 – y from 1 so by substituting we get

**Y= 8**

Then plugging in Y in any of the above equation we get

**X= 25 – 8 = 17**

Problem 6

3 + 2/x = 11/3

3(3x+2) = 11x

9x + 6 = 11x

**X = 3**

Check: 3 + 2/3

3 + (2/3) = 11/3

Problem 7

Let Washington = x

Oregon = y

X + y = 3671

X + 1019 = y, so x = -1019 + y

So by plugging into above equation we get

**Y= 2340**

Putting the values of y into any equation gives us

**X= 1331**

Problem 8

Let x = Rich Gannon

Y = Drew Bledson

X + Y = 9048

X – Y = 330

So by substitution method

**Y= 4359**

**X = 4689**