1. We need to calculate the covariance between W and Z in order to show they are uncorrelated:

Since: , we know that these two values are equal so the result is zero and the variables W and Z are thus uncorrelated.

1. Given we know that:

We can further simply , the correlation between X and Y is negative therefore so as you subtract a negative number rather than adding it.

1. We need to solve for and we know that , we will now use this to calculate our desired variances:
2. We will use the basic computational form of variance and incorporate our known values:

, the covariance is less than -1 so the RA made an error.