```
Python 3.5.2 |Anaconda 4.1.1 (x86_64)| (default, Jul  2 2016,
17:52:12)
Type "copyright", "credits" or "license" for more information.

IPython 4.2.0 -- An enhanced Interactive Python.
?          -> Introduction and overview of IPython's features.
%quickref -> Quick reference.
help       -> Python's own help system.
object?    -> Details about 'object', use 'object??' for extra
details.
%guiref    -> A brief reference about the graphical user
interface.
```

In [**1**]: runfile('/Users/haileykryszewski/Documents/astrHwk1.py',
wdir='/Users/haileykryszewski/Documents')
Homework 1: Hailey Kryszewski 124001456
Question 1:

Mean Median and Mode for FE_H
The mean value of FE_H is: -0.5416666666666666
The median value of FE_H is: -0.55
The mode value of FE_H is: -0.6
The standard deviation of FE_H is: 0.11202836520243023
Mean Median and Mode for oRV
The mean value of oRV is: -5.418421052631579
The median value of oRV is: -5.35
The mode value of oRV is: -5.2
The standard deviation of oRV is: 1.1253480574273982
Mean Median and Mode for PLX
The mean value of PLX is: 0.088125
The median value of PLX is: 0.089
The mode value of PLX is: 0.089
The standard deviation of PLX is: 0.0055917669070569415
Mean Median and Mode for PM
The mean value of PLX is: -1097
The median value of PLX is: -1095.5
The mode value of PLX is: -1093
The standard deviation of PLX is: 8.342661445845684
Mean Median and Mode for Velocities
The mean value of PLX is: -5.14953488372093
The median value of PLX is: -5.3
The mode value of PLX is: -5.2
The standard deviation of PLX is: 1.8825779608069508
Question 2:

The fe_h value represents the metallicity. In other words, this

value represents what part of the mass is not Hydrogen or Helium.

The oRV value represents the radial velocity of the star in
orbit. It is the value of the rate of change in distance of a
star or celestial body and a point.

The PLX value represents the parallax to a given star.

The PM value represents the proper motion of the star is the
movement of a closer star across the sky in relation to further
away stars.

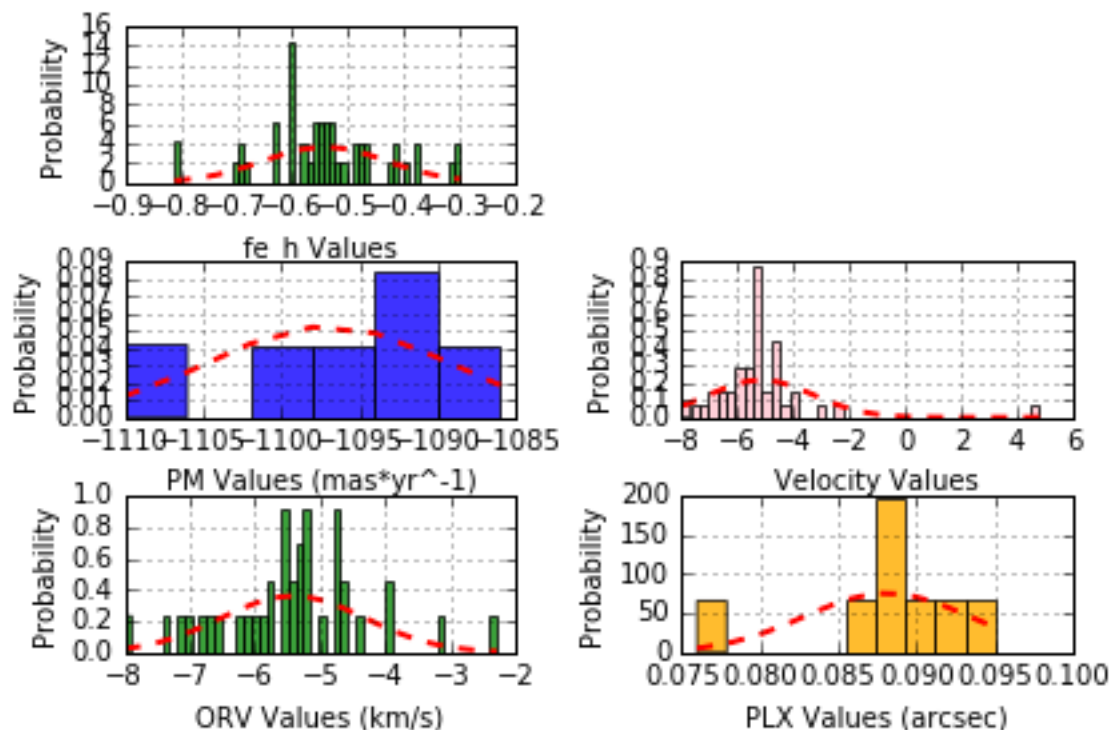The velocities represent how fast the star is moving.

Question 3:

The sample variance of PM is 69.6
The population variance of PM is 58

Python defaults to the sample variance.

Question 4 and 5:

The data appears to follow a normal distribution.

Question 6
Assuming the same astronomer using the same telescope, the
statistical error will result from the difference of the amount
of measurements taken. For example, the fe_h list of values has
48 elements where as the PLX list only has 8. This is because
fe_h has a broader base of values to give a more accurate
distribution. In order of statistical error from most
statistically error prone to least statistically error prone is
PM, PLX, oRV, Velocities, fe_h. The systematic error of the
system is much easier to predict since it is the same astronomer
and the same instrument. The systematic error should be uniform
across all measurements.

In [2]: