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In [17]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sb
a=pd.read_csv('C:/Users/Admin/Desktop/heart dv.csv')
print(a)
```

```
     age  sex  cp  trestbps  chol  fbs  restecg  thalach  exang  oldpeak  \
0     63    1   3       145   233    1        0      150      0      2.3
1     37    1   2       130   250    0        1      187      0      3.5
2     41    0   1       130   204    0        0      172      0      1.4
3     56    1   1       120   236    0        1      178      0      0.8
4     57    0   0       120   354    0        1      163      1      0.6
5     57    1   0       140   192    0        1      148      0      0.4
6     56    0   1       140   294    0        0      153      0      1.3
7     44    1   1       120   263    0        1      173      0      0.0
8     52    1   2       172   199    1        1      162      0      0.5
9     57    1   2       150   168    0        1      174      0      1.6
10    54    1   0       140   239    0        1      160      0      1.2
11    48    0   2       130   275    0        1      139      0      0.2
12    49    1   1       130   266    0        1      171      0      0.6
13    64    1   3       110   211    0        0      144      1      1.8
14    58    0   3       150   283    1        0      162      0      1.0
15    50    0   2       120   219    0        1      158      0      1.6
16    58    0   2       120   340    0        1      172      0      0.0
17    66    0   3       150   226    0        1      114      0      2.6
```


In [3]:
```
a['age'].plot(kind='line')
```

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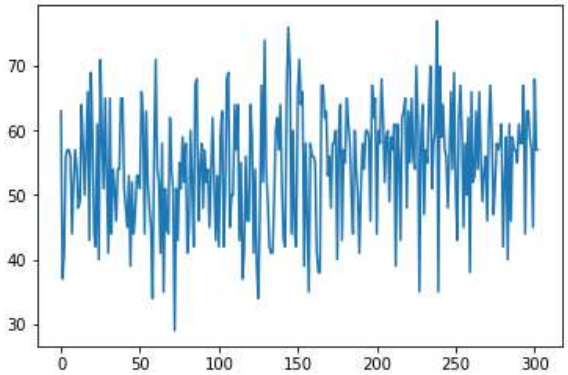
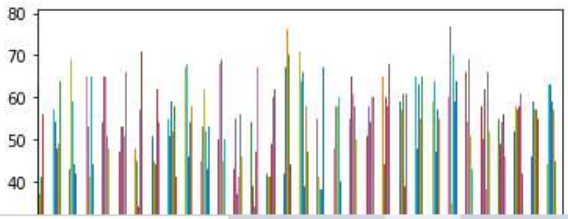
In [3]:
```
a['age'].plot(kind='line')
```

Out[3]: <matplotlib.axes._subplots.AxesSubplot at 0x8eb1e10>



In [4]:
```
a['age'].plot(kind='bar')
```

Out[4]: <matplotlib.axes._subplots.AxesSubplot at 0x919efd0>



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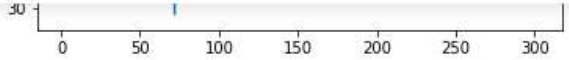
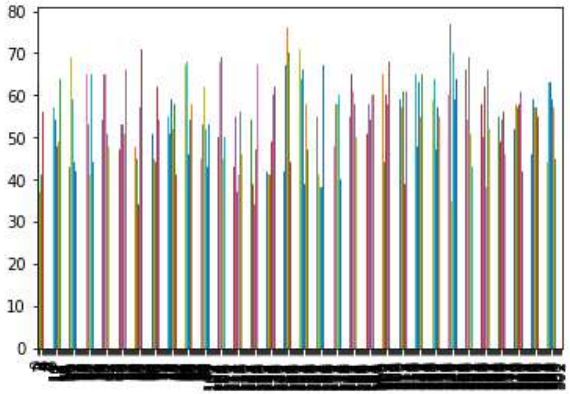


In [4]:
```
a['age'].plot(kind='bar')
```

Out[4]: <matplotlib.axes._subplots.AxesSubplot at 0x919efd0>



In [5]:
```
a['age'].plot(kind='hist')
```

Out[5]: <matplotlib.axes._subplots.AxesSubplot at 0x921a9b0>

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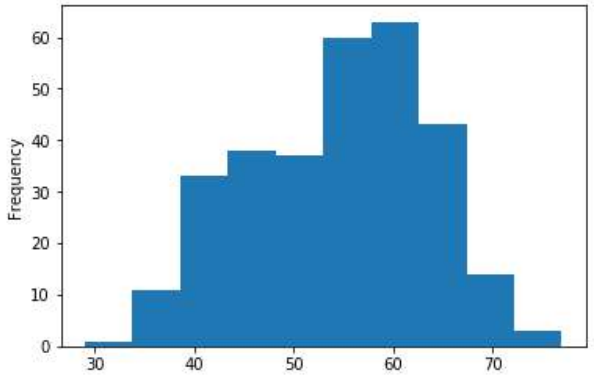
In [5]:
```
a['age'].plot(kind='hist')
```

Out[5]: <matplotlib.axes._subplots.AxesSubplot at 0x921a9b0>



In [6]:
```
a['age'].plot(kind='pie')
```

Out[6]: <matplotlib.axes._subplots.AxesSubplot at 0x95eb850>

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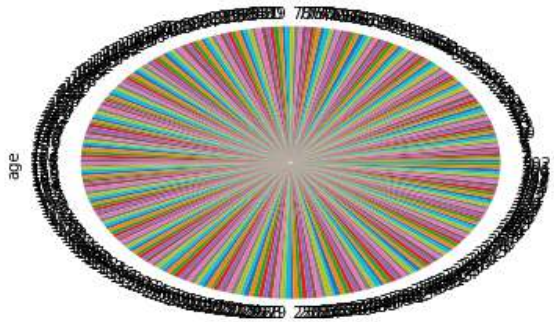
In [6]:
```
a['age'].plot(kind='pie')
```

Out[6]: <matplotlib.axes._subplots.AxesSubplot at 0x95eb850>



In [16]:
```
a['sex'].plot(kind='line')
sb.pairplot(a)
```

Out[16]: <seaborn.axisgrid.PairGrid at 0x3c286bb0>

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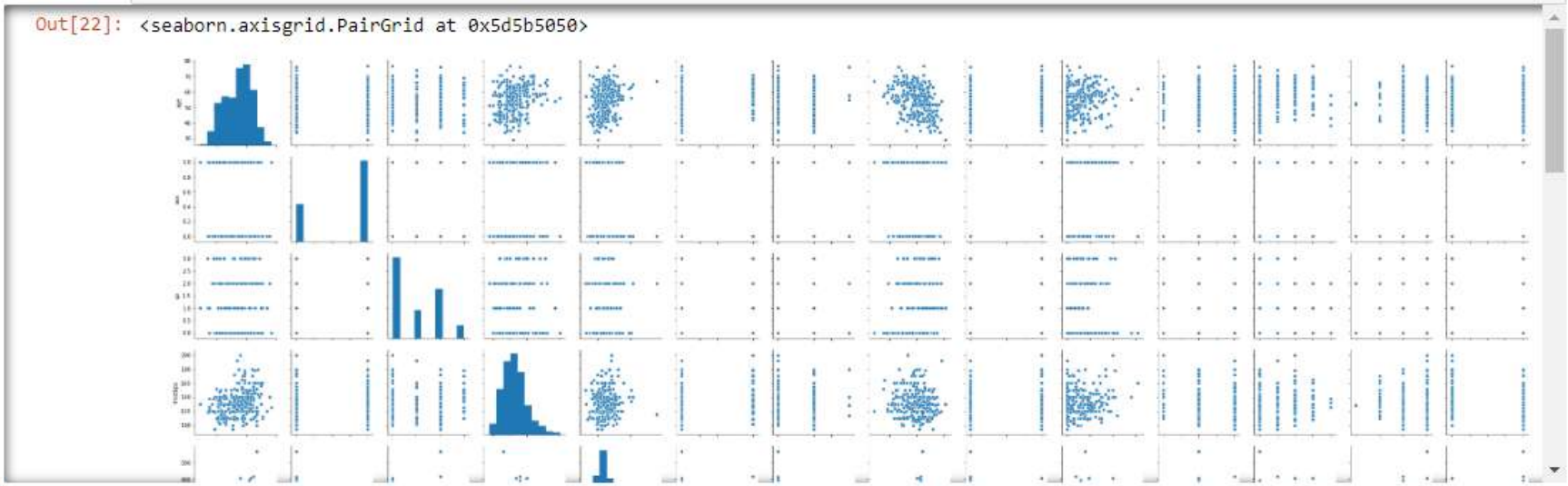
In [22]:
```
sb.pairplot(a)
```

Out[22]:
```
<seaborn.axisgrid.PairGrid at 0x5d5b5050>
```



In [18]:
```
plt.plot(a["chol"])
plt.xlabel("No. of data points")
plt.show()

plt.hist(a["sex"],color="maroon")   # to plot a histogram
plt.show()
```

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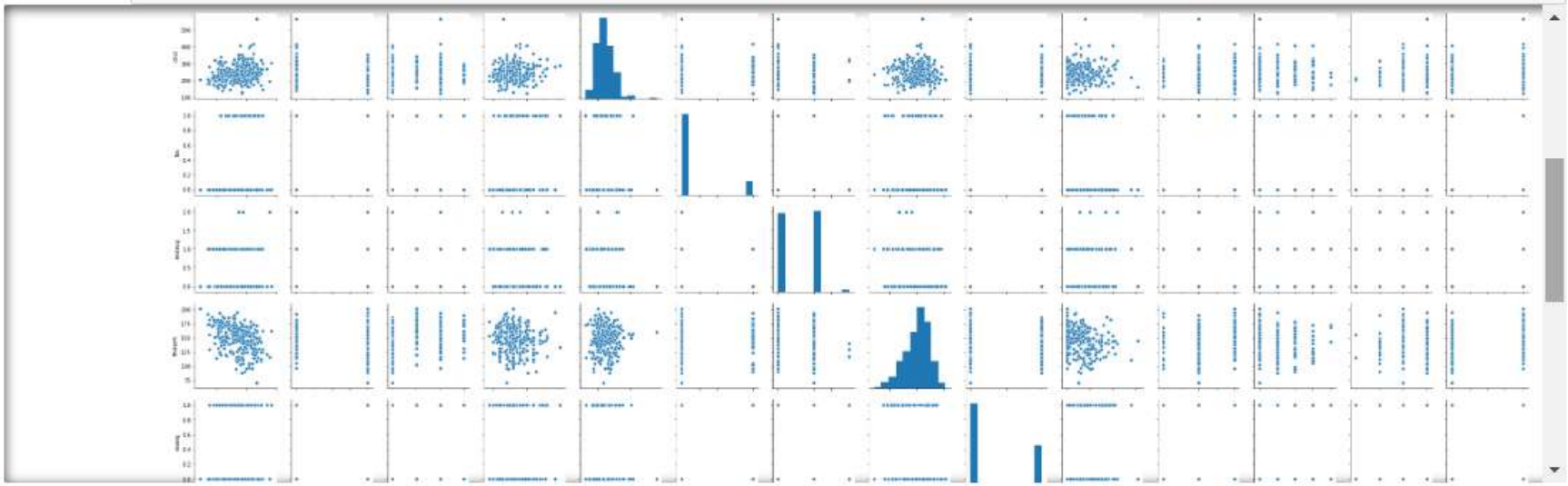
In [22]:
```
sb.pairplot(a)
```



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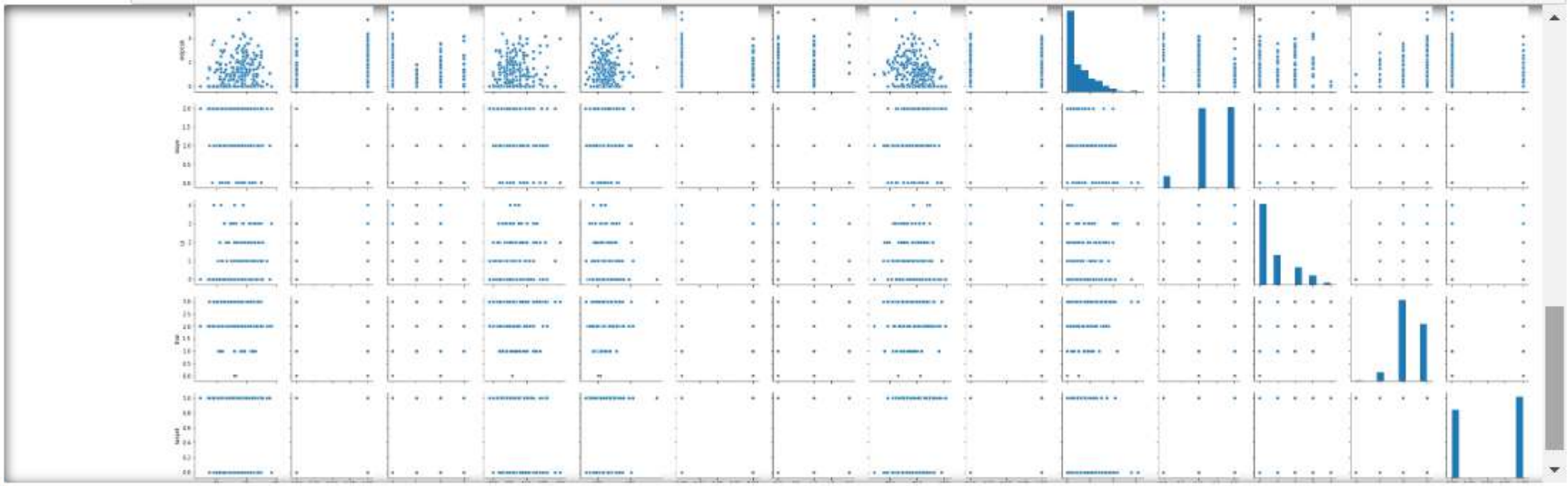
In [22]:
```
sb.pairplot(a)
```



In [18]:
```
plt.plot(a["chol"])
plt.xlabel("No. of data points")
plt.show()

plt.hist(a["sex"],color="maroon")   # to plot a histogram
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```


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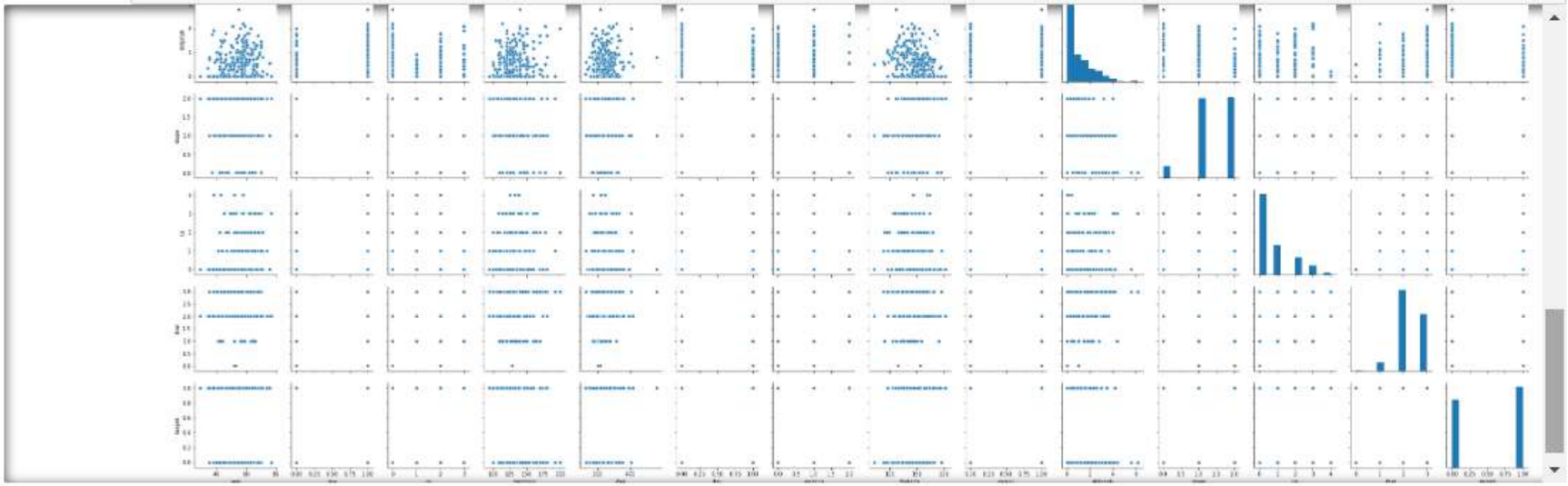
In [22]:
```
sb.pairplot(a)
```



In [18]:
```
plt.plot(a["chol"])
plt.xlabel("No. of data points")
plt.show()

plt.hist(a["sex"],color="maroon")   # to plot a histogram
plt.show()
```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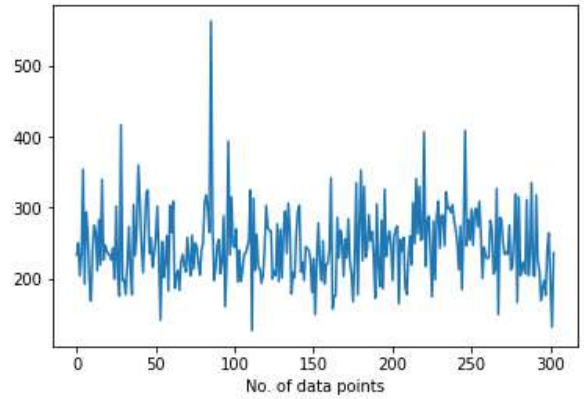
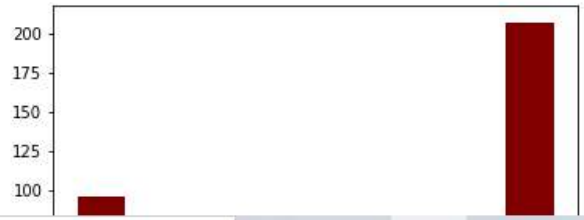
In [18]:
```
plt.plot(a["chol"])
plt.xlabel("No. of data points")
plt.show()

plt.hist(a["sex"],color="maroon")   # to plot a histogram
plt.show()
```





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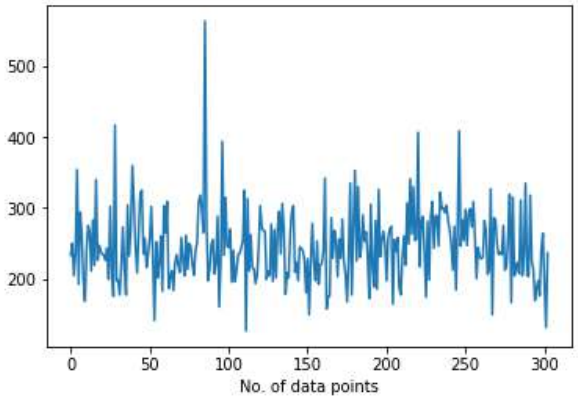

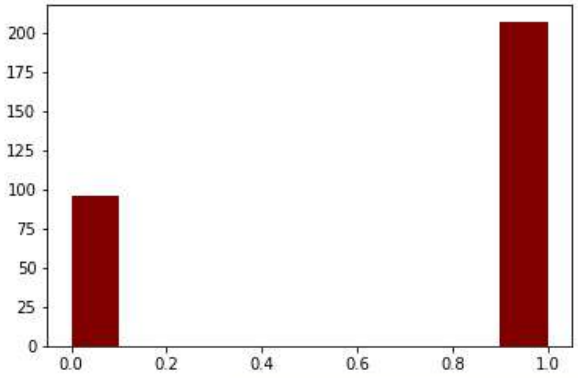

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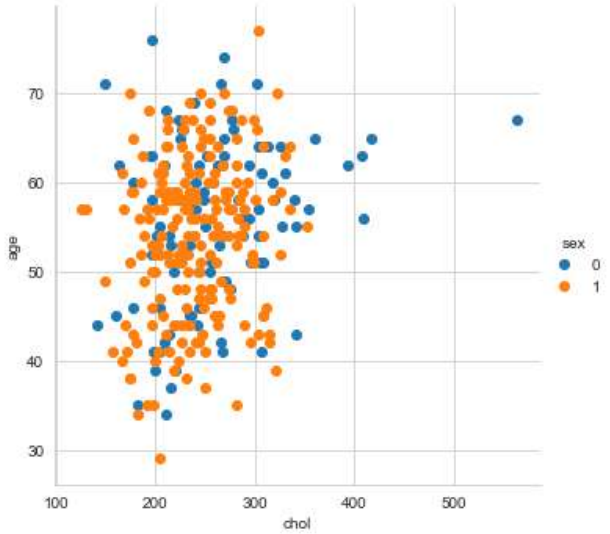
0.0 0.2 0.4 0.6 0.8 1.0

In [18]:
```
sb.set_style('whitegrid');
sb.FacetGrid(a,hue='sex',size=5).map(plt.scatter,
'chol','age').add_legend();
plt.show();
```

```
C:\Users\Admin\Anaconda3\lib\site-packages\seaborn\axisgrid.py:230: UserWarning: The `size` paramter has been renamed to `heig
ht`; please update your code.
  warnings.warn(msg, UserWarning)
```



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Run | Code

In [19]:
```
sb.set_style('whitegrid')
sb.pairplot(a,hue='sex',size=3)
plt.show()
```

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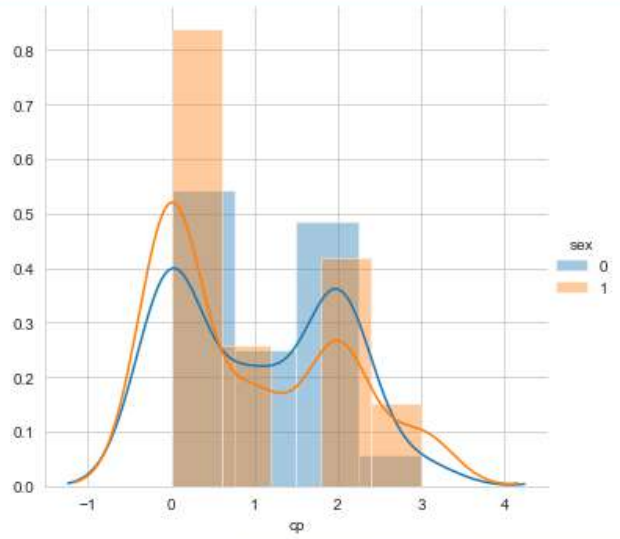
In [21]:
```
sb.FacetGrid(a,hue="sex",size=5).map(sb.distplot,'cp').add_legend()
plt.show()
```

```
C:\Users\Admin\Anaconda3\lib\site-packages\seaborn\axisgrid.py:230: UserWarning: The `size` paramter has been renamed to `heig
ht`; please update your code.
  warnings.warn(msg, UserWarning)
C:\Users\Admin\Anaconda3\lib\site-packages\scipy\stats\stats.py:1713: FutureWarning: Using a non-tuple sequence for multidimen
sional indexing is deprecated; use `arr[tuple(seq)]` instead of `arr[seq]`. In the future this will be interpreted as an array
index, `arr[np.array(seq)]`, which will result either in an error or a different result.
  return np.add.reduce(sorted[indexer] * weights, axis=axis) / sumval
```



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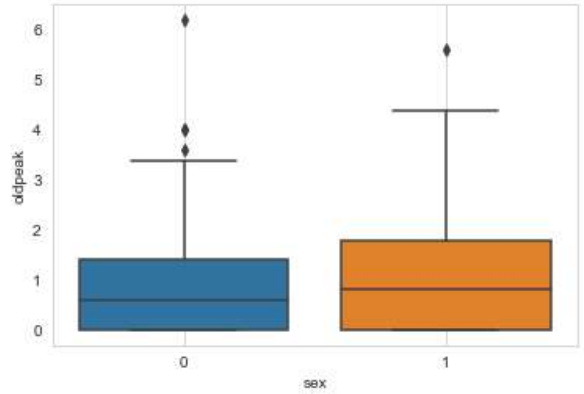
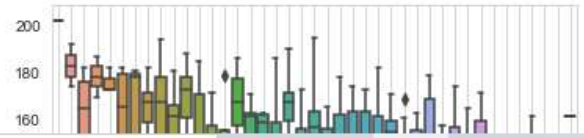
In [23]:
```
sb.boxplot(x='sex',y='oldpeak',data=a)
plt.grid()
plt.show()
```



In [27]:
```
sb.boxplot(x='age',y='thalach',data=a)
plt.grid()
plt.show()
```



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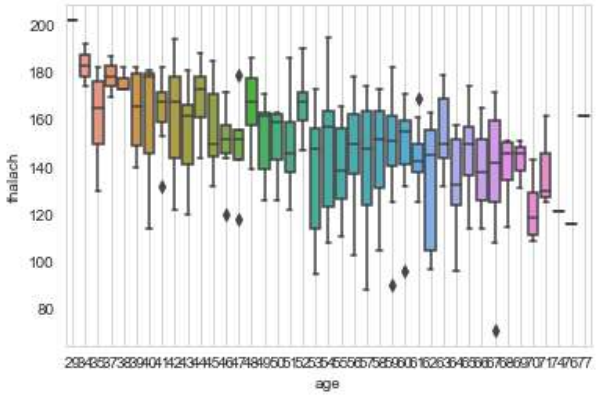
In [27]:
```
sb.boxplot(x='age',y='thalach',data=a)
plt.grid()
plt.show()
```



In [33]:
```
sb.lineplot(x=a['thal'],y=a['target'])
```

```
C:\Users\Admin\Anaconda3\lib\site-packages\scipy\stats\stats.py:1713: FutureWarning: Using a non-tuple sequence for multidimen
sional indexing is deprecated; use `arr[tuple(seq)]` instead of `arr[seq]`. In the future this will be interpreted as an array
index, `arr[np.array(seq)]`, which will result either in an error or a different result.
  return np.add.reduce(sorted[indexer] * weights, axis=axis) / sumval
```

Out[33]: <matplotlib.axes._subplots.AxesSubplot at 0x29fcd6b0>

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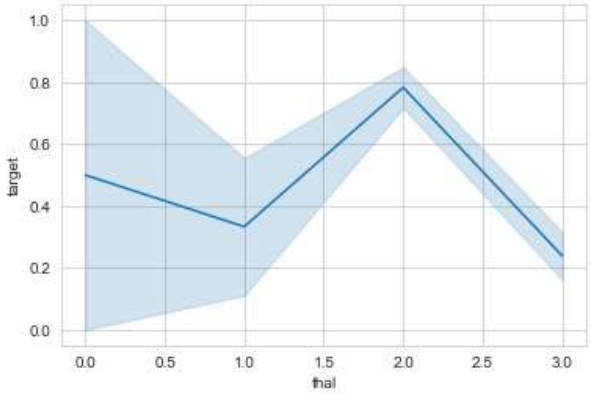
In [33]:
```
sb.lineplot(x=a['thal'],y=a['target'])
```

```
C:\Users\Admin\Anaconda3\lib\site-packages\scipy\stats\stats.py:1713: FutureWarning: Using a non-tuple sequence for multidimen
sional indexing is deprecated; use `arr[tuple(seq)]` instead of `arr[seq]`. In the future this will be interpreted as an array
index, `arr[np.array(seq)]`, which will result either in an error or a different result.
  return np.add.reduce(sorted[indexer] * weights, axis=axis) / sumval
```

Out[33]: <matplotlib.axes._subplots.AxesSubplot at 0x29fcd6b0>



In [35]:
```
sb.countplot("sex",data=a)
```

Out[35]: <matplotlib.axes._subplots.AxesSubplot at 0x1f1b2430>

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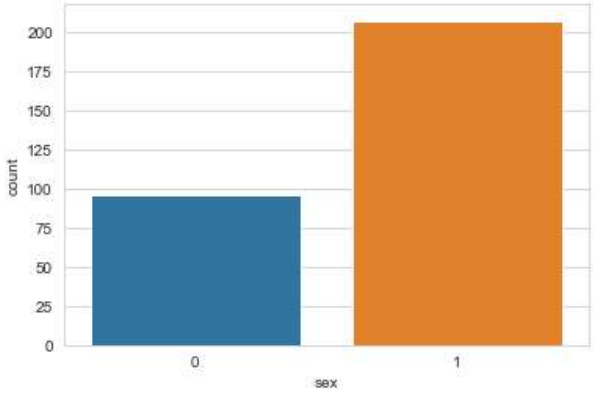
In [35]:
```
sb.countplot("sex",data=a)
```

Out[35]: <matplotlib.axes._subplots.AxesSubplot at 0x1f1b2430>



In [39]:
```
sb.catplot('age',kind='count',hue='sex',data=a,height=5)
```

Out[39]: <seaborn.axisgrid.FacetGrid at 0x2c6a8eb0>

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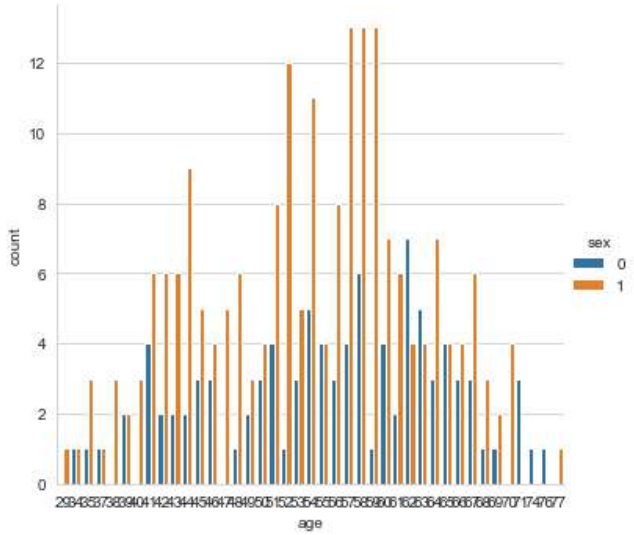
In [39]:
```
sb.catplot('age',kind='count',hue='sex',data=a,height=5)
```

Out[39]: <seaborn.axisgrid.FacetGrid at 0x2c6a8eb0>



In [45]:
```
plt.pie(a['sex'].value_counts(),labels=a['sex'].unique())
plt.show()
```

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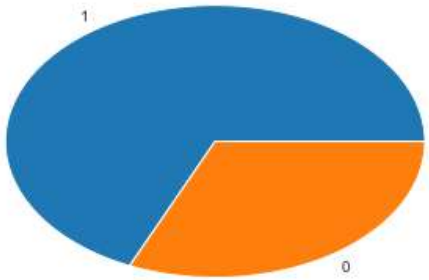
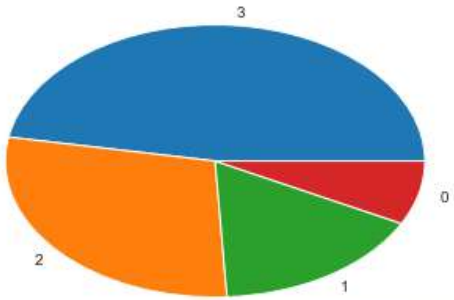
In [45]:
```
plt.pie(a['sex'].value_counts(),labels=a['sex'].unique())
plt.show()
plt.pie(a['cp'].value_counts(),labels=a['cp'].unique())
plt.show()
```





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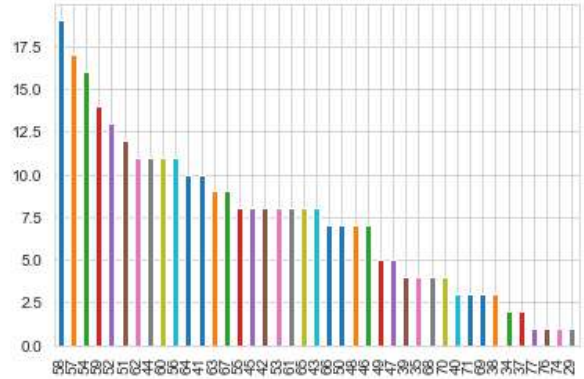
In [50]:
```
a['age'].value_counts().plot(kind="bar")
```

Out[50]: <matplotlib.axes._subplots.AxesSubplot at 0x2e203b70>



In [ ]:

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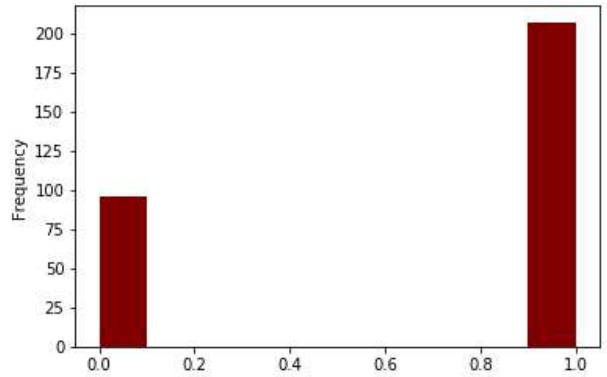
In [44]:
```
a['sex'].plot(kind='hist',color="maroon")
```

Out[44]: <matplotlib.axes._subplots.AxesSubplot at 0x679b8e50>



In [45]:
```
a['cp'].plot(kind='hist',color="blue")
```

Out[45]: <matplotlib.axes._subplots.AxesSubplot at 0x67a021f0>

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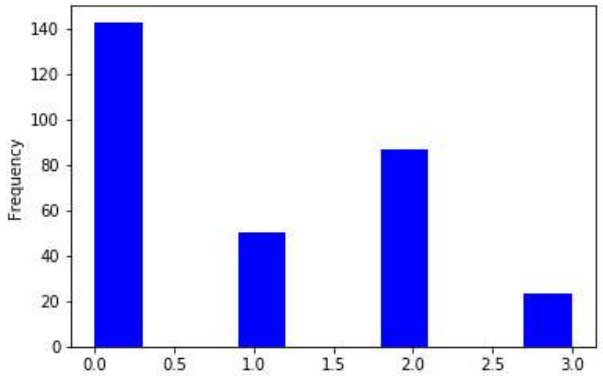
0.0 0.2 0.4 0.6 0.8 1.0

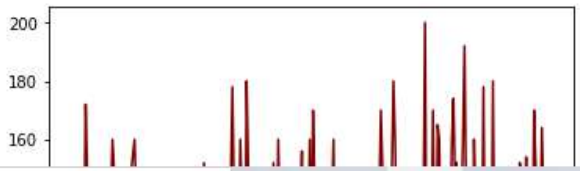
In [45]:
```
a['cp'].plot(kind='hist',color="blue")
```

Out[45]: <matplotlib.axes._subplots.AxesSubplot at 0x67a021f0>



In [46]:
```
a['trestbps'].plot(kind='line',color="maroon")
```

Out[46]: <matplotlib.axes._subplots.AxesSubplot at 0x67a024f0>



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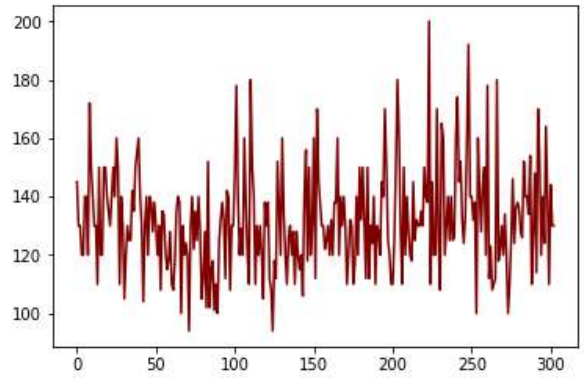
Run | Code

0.0 0.5 1.0 1.5 2.0 2.5 3.0

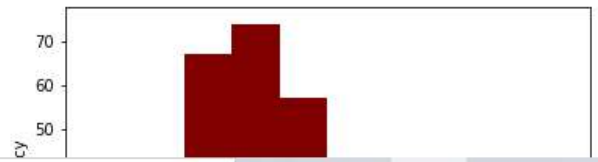
In [46]:
```
a['trestbps'].plot(kind='line',color="maroon")
```

Out[46]: <matplotlib.axes._subplots.AxesSubplot at 0x67a024f0>



In [47]:
```
a['trestbps'].plot(kind='hist',color="maroon")
```

Out[47]: <matplotlib.axes._subplots.AxesSubplot at 0x67a327f0>



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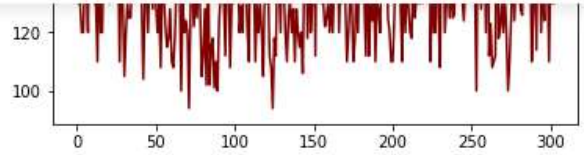
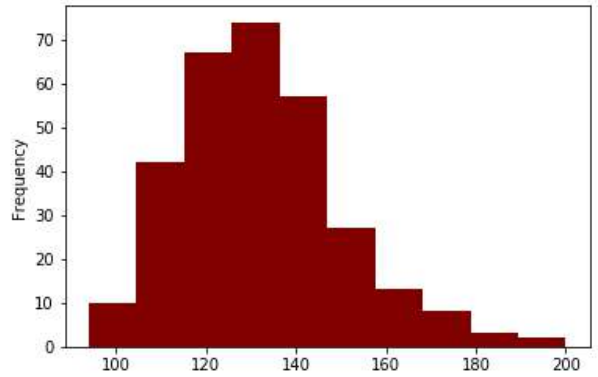


In [47]:
```
a['trestbps'].plot(kind='hist',color="maroon")
```

Out[47]: <matplotlib.axes._subplots.AxesSubplot at 0x67a327f0>



In [48]:
```
a['chol'].plot(kind='line',color="purple")
```

Out[48]: <matplotlib.axes._subplots.AxesSubplot at 0x67ad7db0>

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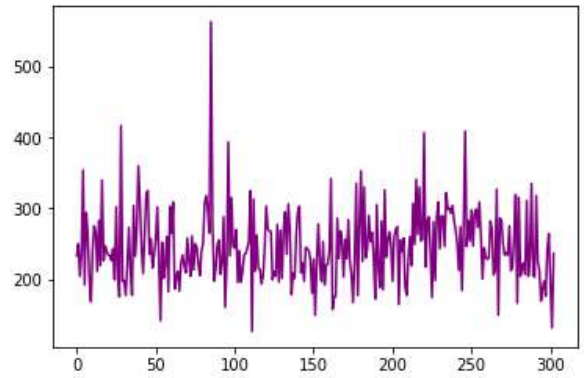
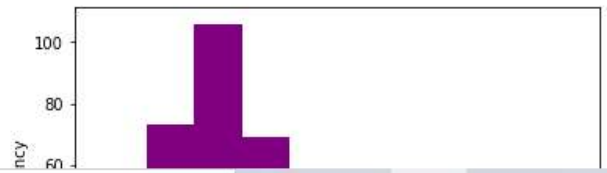
In [48]:
```
a['chol'].plot(kind='line',color="purple")
```

Out[48]: <matplotlib.axes._subplots.AxesSubplot at 0x67ad7db0>



In [49]:
```
a['chol'].plot(kind='hist',color="purple")
```

Out[49]: <matplotlib.axes._subplots.AxesSubplot at 0x67b143b0>



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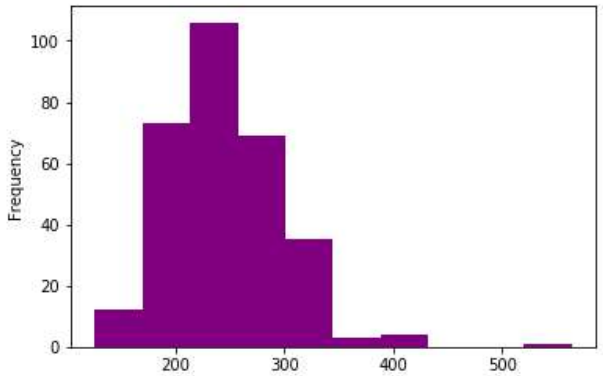
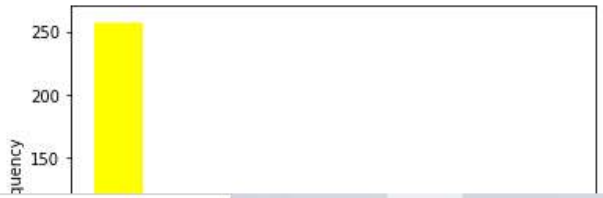
In [49]:
```
a['chol'].plot(kind='hist',color="purple")
```

Out[49]: <matplotlib.axes._subplots.AxesSubplot at 0x67b143b0>



In [50]:
```
a['fbs'].plot(kind='hist',color="yellow")
```

Out[50]: <matplotlib.axes._subplots.AxesSubplot at 0x67b5ac30>



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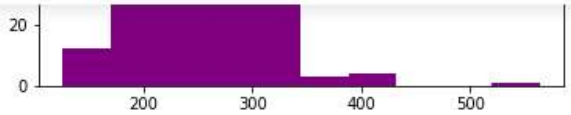
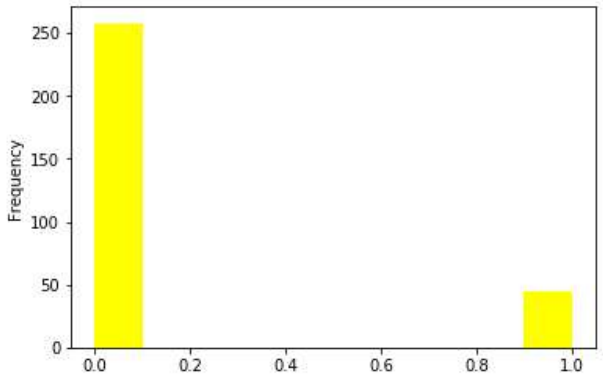


In [50]:
```
a['fbs'].plot(kind='hist',color="yellow")
```

Out[50]: <matplotlib.axes._subplots.AxesSubplot at 0x67b5ac30>



In [51]:
```
a['restecg'].plot(kind='hist',color="red")
```

Out[51]: <matplotlib.axes._subplots.AxesSubplot at 0x67b972b0>

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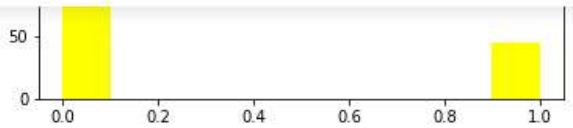
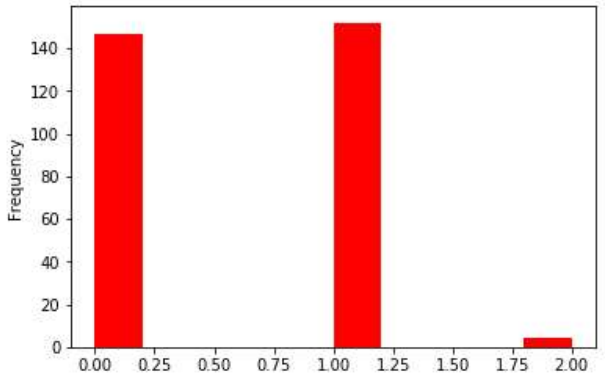


In [51]:
```
a['restecg'].plot(kind='hist',color="red")
```

Out[51]: <matplotlib.axes._subplots.AxesSubplot at 0x67b972b0>



In [52]:
```
a['thalach'].plot(kind='line',color="black")
```

Out[52]: <matplotlib.axes._subplots.AxesSubplot at 0x67be9a90>

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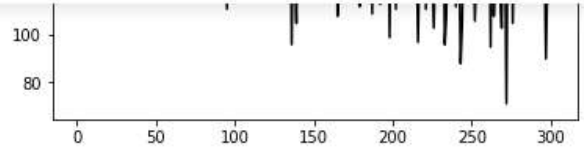
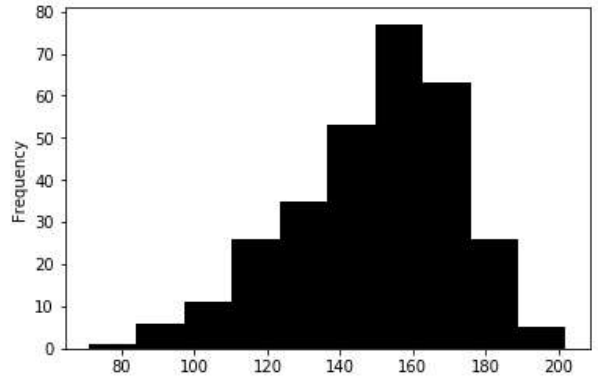


In [53]:
```
a['thalach'].plot(kind='hist',color="black")
```

Out[53]: <matplotlib.axes._subplots.AxesSubplot at 0x67c267d0>



In [42]:
```
a['oldpeak'].plot(kind='line')
```

Out[42]: <matplotlib.axes._subplots.AxesSubplot at 0x6792ce90>

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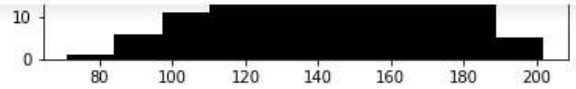
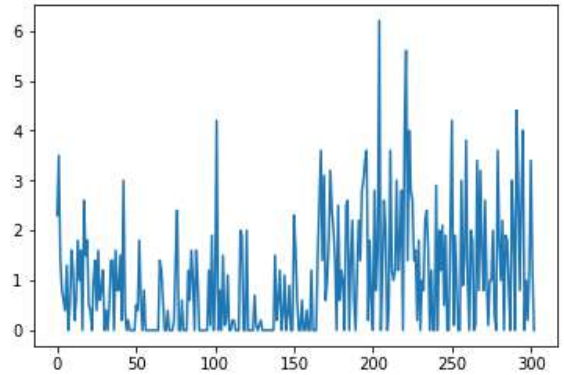


In [42]:
```
a['oldpeak'].plot(kind='line')
```

Out[42]: <matplotlib.axes._subplots.AxesSubplot at 0x6792ce90>



In [43]:
```
a['oldpeak'].plot(kind='hist')
```

Out[43]: <matplotlib.axes._subplots.AxesSubplot at 0x67970150>

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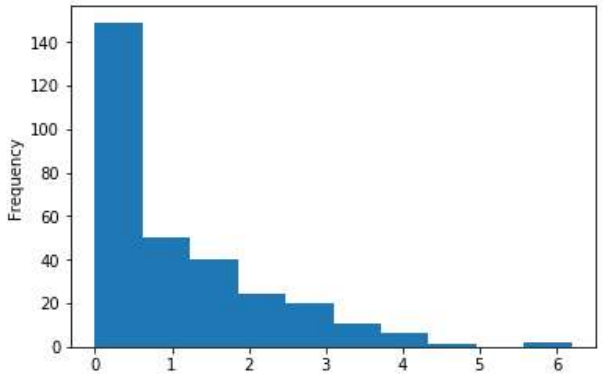
In [43]:
```
a['oldpeak'].plot(kind='hist')
```

Out[43]: <matplotlib.axes._subplots.AxesSubplot at 0x67970150>



In [ ]:

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