In [13]:
```
import pandas as pd
from matplotlib import pyplot as plt
import seaborn as sns
import warnings
warnings.filterwarnings('ignore')
```

In [2]:
```
import os
```

In [3]:
```
os.getcwd()
```

Out[3]:
```
'C:\\Users\\Akarsh\\data science 6th january'
```

In [4]:
```
os.chdir('C:\\Users\\Akarsh\\Desktop\\assignments')
```

In [5]:
```
os.getcwd()
```

Out[5]:
```
'C:\\Users\\Akarsh\\Desktop\\assignments'
```

a) Check whether the MPG of Cars follows Normal Distribution

In [6]:
```
cars=pd.read_csv('Cars.csv')
cars
```

Out[6]:

	HP	MPG	VOL	SP	WT
0	49	53.700681	89	104.185353	28.762059
1	55	50.013401	92	105.461264	30.466833
2	55	50.013401	92	105.461264	30.193597
3	70	45.696322	92	113.461264	30.632114
4	53	50.504232	92	104.461264	29.889149
...	...	...	...	...	...
76	322	36.900000	50	169.598513	16.132947
77	238	19.197888	115	150.576579	37.923113
78	263	34.000000	50	151.598513	15.769625
79	295	19.833733	119	167.944460	39.423099
80	236	12.101263	107	139.840817	34.948615

81 rows × 5 columns

In [7]:
```
cars['MPG'].mean()
```

Out[7]:
```
34.422075728024666
```

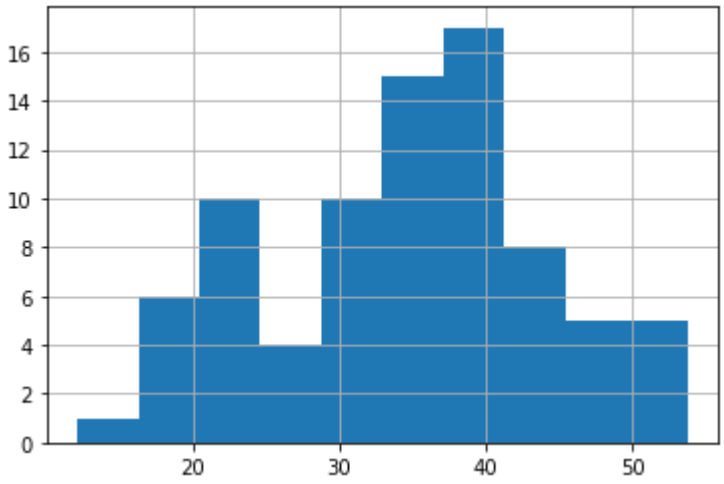
In [8]:
```
cars['MPG'].median()
```

Out[8]:
```
35.15272697
```

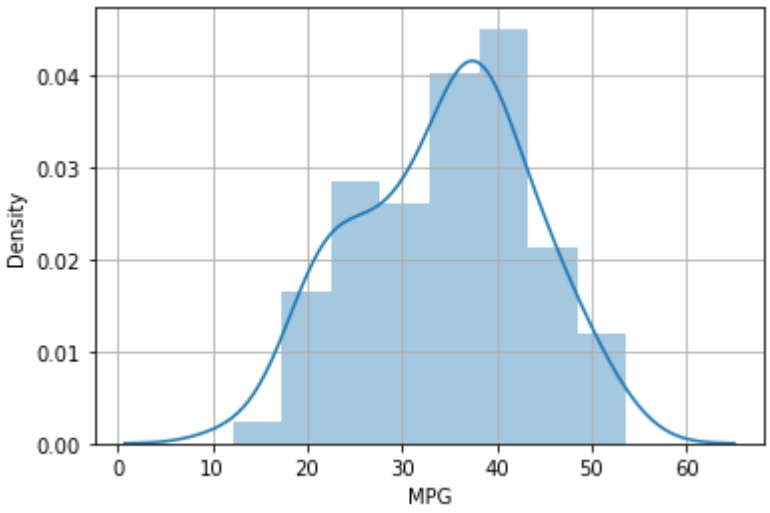
In [9]:
```
cars['MPG'].mode()
```

Out[9]:
```
0    29.629936
dtype: float64
```

In [10]:
```
cars['MPG'].hist()
plt.show()
```



In [14]:
```
sns.distplot(cars['MPG'])
plt.grid(True)
plt.show()
```



In [12]:
```
cars['MPG'].skew()
```

Out[12]:
```
-0.17794674747025727
```

In [15]:
```
cars['MPG'].kurt()
```

Out[15]:
```
-0.6116786559430913
```

In [16]:
```
##From above plot and values we can say that data is fairly symmetrical, i
```

b) Check Whether the Adipose Tissue (AT) and Waist Circumference(Waist) from wc-at data set follows Normal Distribution

In [17]:
```
import pandas as pd
from matplotlib import pyplot as plt
import seaborn as sns
```

In [18]:
```
df=pd.read_csv('wc-at.csv')
```

In [19]:
```
df.head()
```

Out[19]:

	Waist	AT
0	74.75	25.72
1	72.60	25.89
2	81.80	42.60
3	83.95	42.80
4	74.65	29.84

In [20]:
```
df.mean()
```

Out[20]:
```
Waist     91.901835
AT       101.894037
dtype: float64
```

In [21]:
```
df.mode()
```

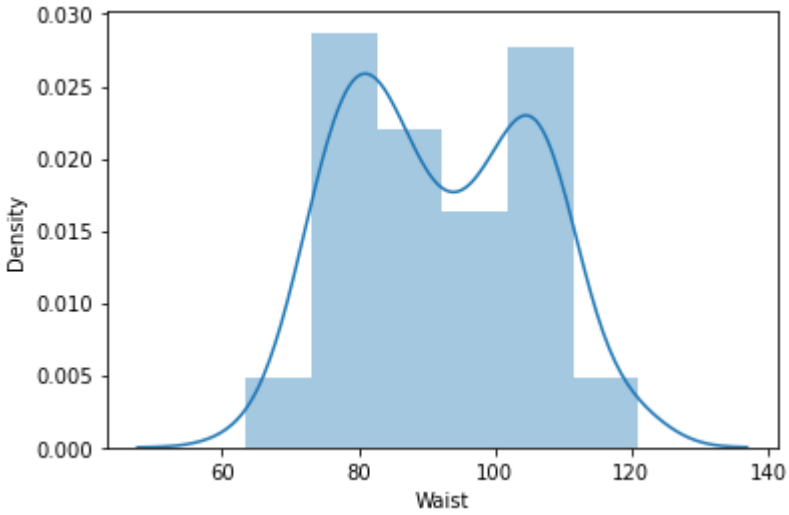
Out[21]:

	Waist	AT
0	94.5	121.0
1	106.0	123.0
2	108.5	NaN

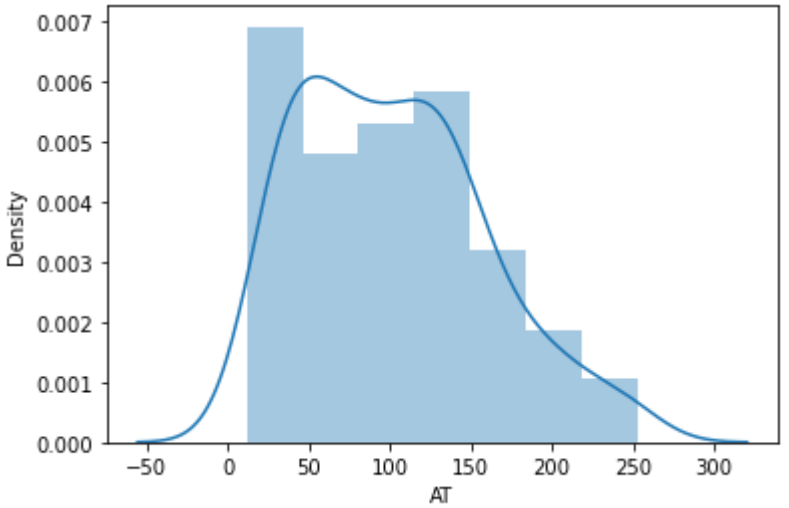
In [22]:
```
df.median()
```

Out[22]:
```
Waist     90.80
AT        96.54
dtype: float64
```

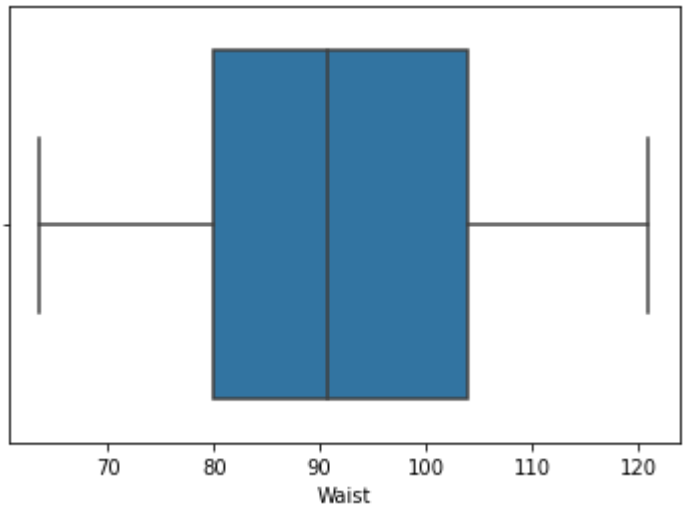
In [23]:
```
sns.distplot(df['Waist'])
plt.show()
```



In [24]:
```
sns.distplot(df['AT'])
plt.show()
```

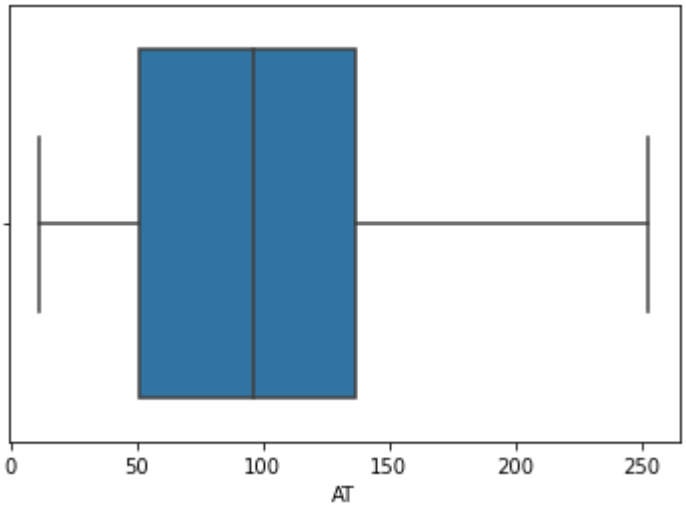


In [25]:
```
sns.boxplot(df['Waist'])
plt.show()

## mean> median, both the whisker are of same lenght, median is slightly sl
```



In [26]:

```
sns.boxplot(df['AT'])
plt.show()

# mean> median, right whisker is larger than left whisker, data is positive
```



In [ ]: