In [31]:

```
# Calculate Skewness, Kurtosis & draw inferences on the following data
#       Cars speed and distance
#       SP and Weight(WT)
```

In [8]:

```
import pandas as pd
import numpy as np
from matplotlib import pyplot as plt
from scipy import stats
```

In [14]:

```
car_speed= pd.read_csv('Q9_a.csv')
car_speed
```

Out[14]:

	Index	speed	dist
0	1	4	2
1	2	4	10
2	3	7	4
3	4	7	22
4	5	8	16
5	6	9	10
6	7	10	18
7	8	10	26
8	9	10	34
9	10	11	17
10	11	11	28
11	12	12	14
12	13	12	20
13	14	12	24
14	15	12	28
15	16	13	26
16	17	13	34
17	18	13	34
18	19	13	46
19	20	14	26
20	21	14	36
21	22	14	60
22	23	14	80
23	24	15	20
24	25	15	26
25	26	15	54
26	27	16	32
27	28	16	40
28	29	17	32
29	30	17	40
30	31	17	50
31	32	18	42
32	33	18	56
33	34	18	76

	Index	speed	dist
34	35	18	84
35	36	19	36
36	37	19	46
37	38	19	68
38	39	20	32
39	40	20	48
40	41	20	52
41	42	20	56
42	43	20	64
43	44	22	66
44	45	23	54
45	46	24	70
46	47	24	92
47	48	24	93
48	49	24	120
49	50	25	85

In [15]:

```
cars_weight= pd.read_csv('Q9_b.csv')
cars_weight
```

	Unnamed: 0	SP	WT
0	1	104.185353	28.762059
1	2	105.461264	30.466833
2	3	105.461264	30.193597
3	4	113.461264	30.632114
4	5	104.461264	29.889149
...	...	...	...
76	77	169.598513	16.132947
77	78	150.576579	37.923113
78	79	151.598513	15.769625
79	80	167.944460	39.423099
80	81	139.840817	34.948615

cleaning the data

In [18]:

```
del car_speed['Index']
```

In [19]:

```
1 car_speed
```

Out[19]:

	speed	dist
0	4	2
1	4	10
2	7	4
3	7	22
4	8	16
5	9	10
6	10	18
7	10	26
8	10	34
9	11	17
10	11	28
11	12	14
12	12	20
13	12	24
14	12	28
15	13	26
16	13	34
17	13	34
18	13	46
19	14	26
20	14	36
21	14	60
22	14	80
23	15	20
24	15	26
25	15	54
26	16	32
27	16	40
28	17	32
29	17	40
30	17	50
31	18	42
32	18	56
33	18	76

	speed	dist
34	18	84
35	19	36
36	19	46
37	19	68
38	20	32
39	20	48
40	20	52
41	20	56
42	20	64
43	22	66
44	23	54
45	24	70
46	24	92
47	24	93
48	24	120
49	25	85

In [20]:

```
1 del cars_weight['Unnamed: 0']
```

In [21]:

```
1 cars_weight
```

Out[21]:

	SP	WT
0	104.185353	28.762059
1	105.461264	30.466833
2	105.461264	30.193597
3	113.461264	30.632114
4	104.461264	29.889149
...	...	...
76	169.598513	16.132947
77	150.576579	37.923113
78	151.598513	15.769625
79	167.944460	39.423099
80	139.840817	34.948615

81 rows × 2 columns

Cars speed and distance

In [23]:

```
car_speed['speed'].skew()          # skew is < 0.5 The data is moderatly symmetrical
```

Out[23]:

```
-0.11750986144663393
```

In [26]:

```
car_speed['speed'].kurtosis()    # kurtosis has no outliers so can be consider as norma
```

Out[26]:

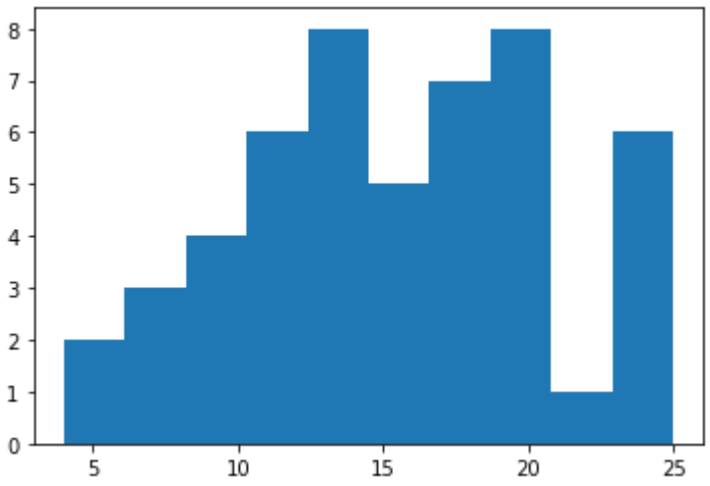
```
-0.5089944204057617
```

In [27]:

```
plt.hist(car_speed['speed'])
plt.show
```

Out[27]:

```
<function matplotlib.pyplot.show(close=None, block=None)>
```



In [28]:

```
car_speed['dist'].skew()          # skew is >0.5 so data is not normally distributed
```

Out[28]:

```
0.8068949601674215
```

In [29]:

```
car_speed['dist'].kurtosis()      #  kurtosis has no outliers so can be consider as nor
```

Out[29]:

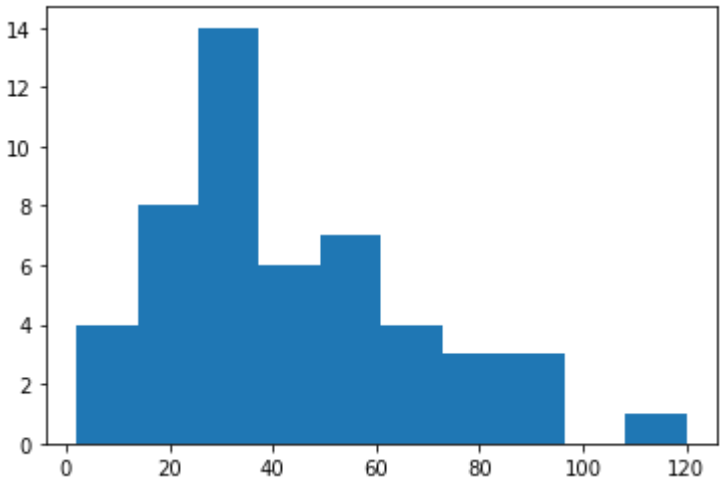
```
0.4050525816795765
```

In [30]:

```
plt.hist(car_speed['dist'])
plt.show
```

Out[30]:

```
<function matplotlib.pyplot.show(close=None, block=None)>
```



SP and Weight(WT)

In [32]:

```
cars_weight
```

Out[32]:

	SP	WT
0	104.185353	28.762059
1	105.461264	30.466833
2	105.461264	30.193597
3	113.461264	30.632114
4	104.461264	29.889149
...	...	...
76	169.598513	16.132947
77	150.576579	37.923113
78	151.598513	15.769625
79	167.944460	39.423099
80	139.840817	34.948615

81 rows × 2 columns

In [33]:

```
cars_weight['SP'].skew()              # skew is >0.5 so data is not normally distribute
```

Out[33]:

```
1.6114501961773586
```

In [34]:

```
cars_weight['SP'].kurtosis()          #  kurtosis has less outliers
```

Out[34]:

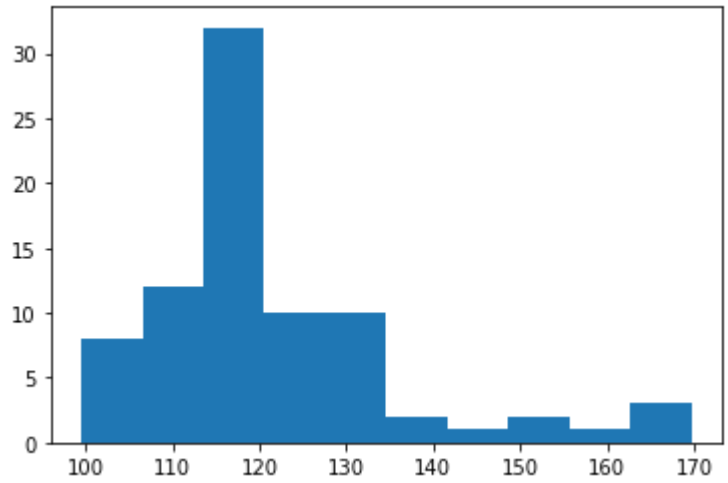
```
2.9773289437871835
```

In [35]:

```
plt.hist(cars_weight['SP'])
plt.show
```

Out[35]:

```
<function matplotlib.pyplot.show(close=None, block=None)>
```



In [36]:

```
cars_weight['WT'].skew()                        # skew is >0.5 so data is not normally d
```

Out[36]:

```
-0.6147533255357768
```

In [38]:

```
cars_weight['WT'].kurtosis()
```

Out[38]:

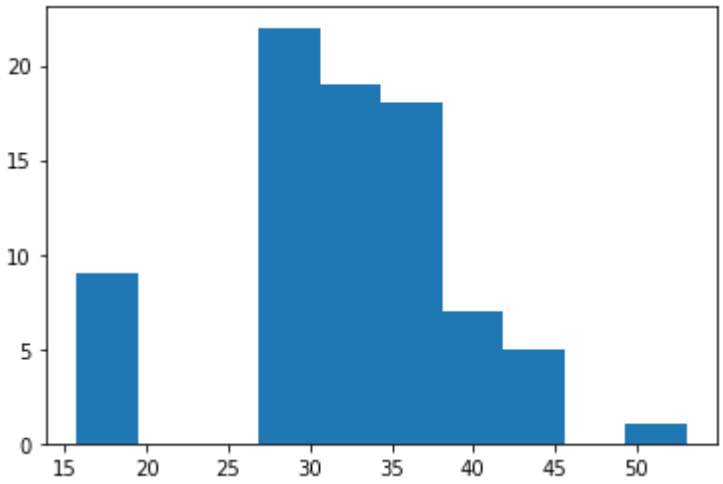
```
0.9502914910300326
```

In [39]:

```
1 plt.hist(cars_weight['WT'])
2 plt.show
```

Out[39]:

```
<function matplotlib.pyplot.show(close=None, block=None)>
```



In [ ]:

```
1
```