In [1]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
from helper import fit_and_plot_linear, fit_and_plot_multi

%matplotlib inline
```

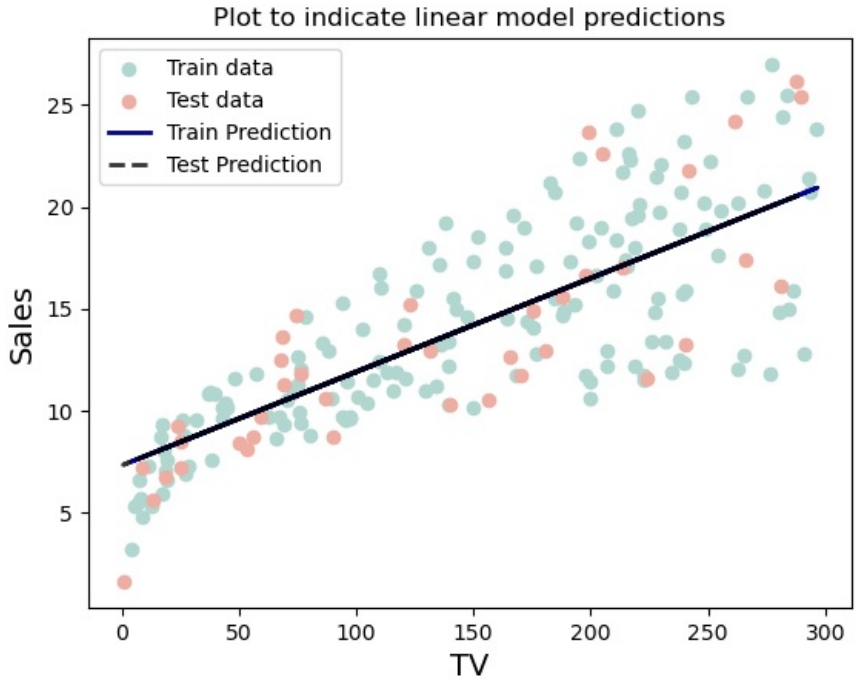
In [2]:
```
df = pd.read_csv("Advertising.csv")

df.head()
```

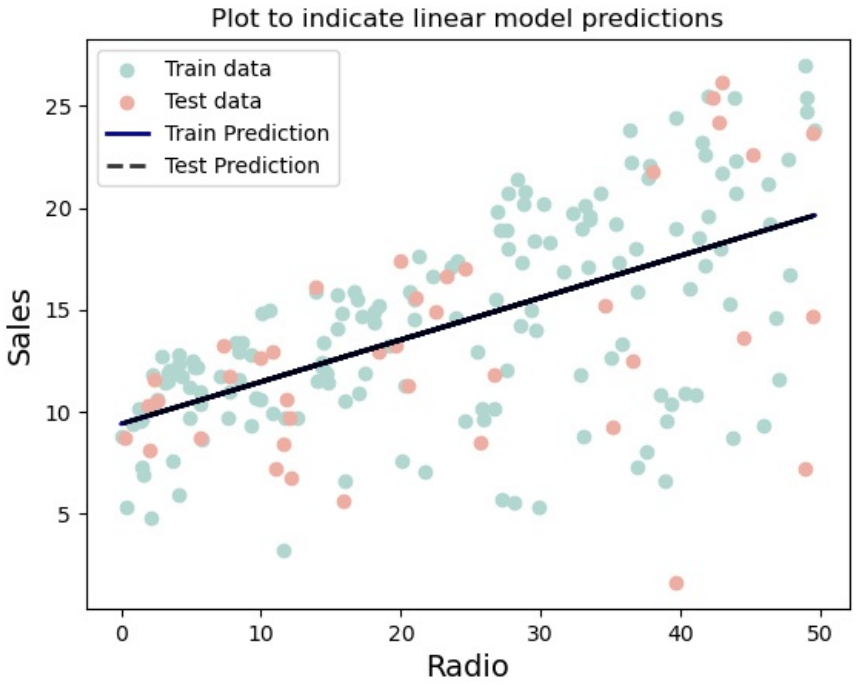
Out[2]:

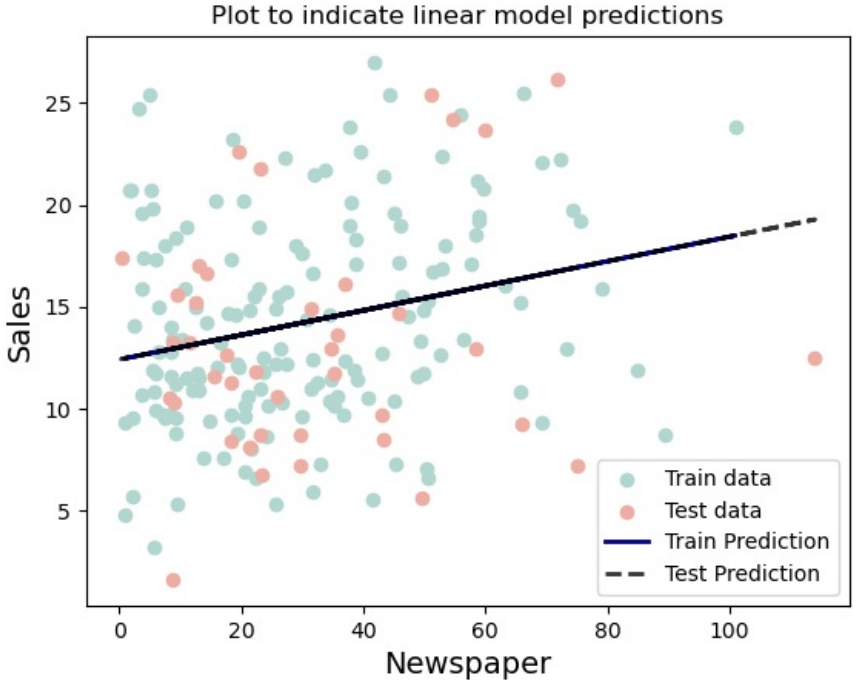
	TV	Radio	Newspaper	Sales
0	230.1	37.8	69.2	22.1
1	44.5	39.3	45.1	10.4
2	17.2	45.9	69.3	9.3
3	151.5	41.3	58.5	18.5
4	180.8	10.8	58.4	12.9

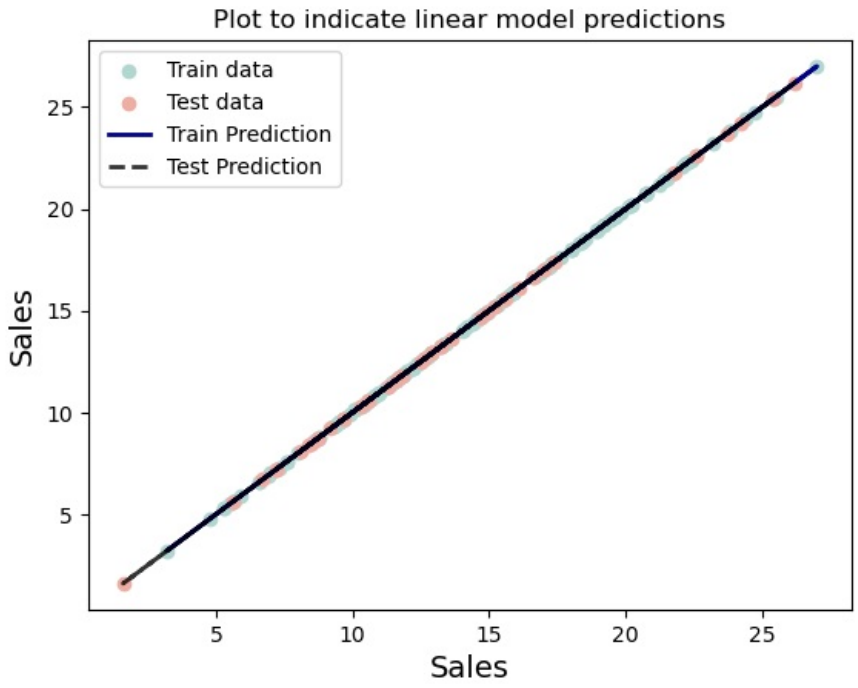
In [3]:
```
df_results = pd.DataFrame(
    [
        ["TV", "0.5884742462828709", "0.676315157793972"],
        ["Radio", "(0.35671845263128477", "0.22981692241915952"],
        ["Newspaper", "0.06441636735498679", "-0.021217489521373478"],
        ["Sales", "1.0", "1.0"],
    ],
    columns=["Predictor", "R2 Train", "R2 Test"],
)
```

In [4]:
```
fit_and_plot_linear(df[["TV"]])
fit_and_plot_linear(df[["Radio"]])
fit_and_plot_linear(df[["Newspaper"]])
fit_and_plot_linear(df[["Sales"]])
```




Plot to indicate linear model predictions
Train data
Test data
Train Prediction
Test Prediction
Sales
Radio
0
10
20
30
40
50
5
10
15
20
25


Plot to indicate linear model predictions
Train data
Test data
Train Prediction
Test Prediction
Sales
Newspaper
0
20
40
60
80
100
5
10
15
20
25



Out[4]: (1.0, 1.0)

In [5]:
```
fit_and_plot_multi()
```

Out[5]: (0.9067114990146383, 0.8601145185017868)

In [6]:
```
df_results.head()
```

Out[6]:

	Predictor	R2 Train	R2 Test
0	TV	0.5884742462828709	0.676315157793972
1	Radio	(0.35671845263128477	0.22981692241915952
2	Newspaper	0.06441636735498679	-0.021217489521373478
3	Sales	1.0	1.0