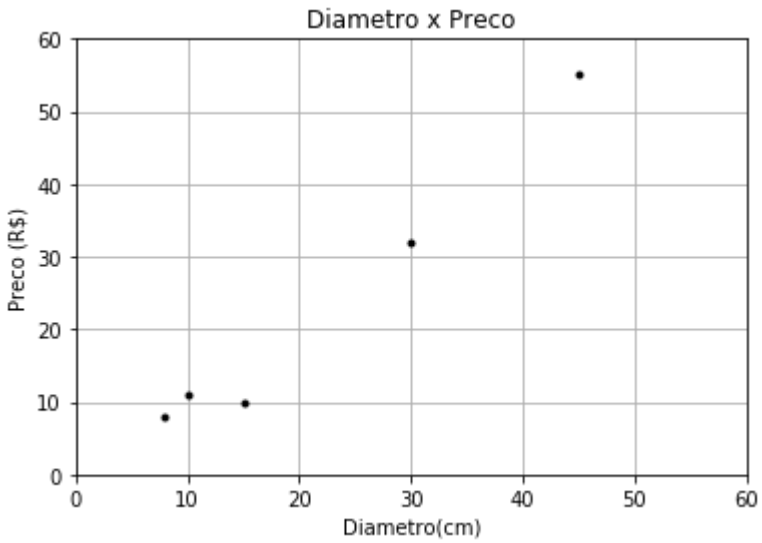
In [1]:
```
#exemplo basico para uma previsão de preço
```

In [13]:
```
import matplotlib.pyplot as plt
import numpy as np
%matplotlib inline
```

In [17]:
```
Diametro = [[8],[10],[15],[30],[45]]
Preco = [[8],[11],[10],[32],[55]]
```

In [18]:
```
# fazer uma anãlise dos dados

plt.figure()
plt.xlabel('Diametro(cm)')
plt.ylabel('Preco (R$)')
plt.title('Diametro x Preco')
plt.plot(Diametro, Preco, 'k.')
plt.axis([0, 60 ,0, 60])
plt.grid(True)
plt.show()
```



In [21]:
```
#Criar o modelo para prever o comportamento do preço
from sklearn.linear_model import LinearRegression
```

In [30]:
```
# Preparar os dados para o treino

X = [[8],[10],[15],[30],[45]]
Y = [[8],[11],[10],[32],[55]]

modelo = LinearRegression()

type(modelo)
```

Out[30]:
```
sklearn.linear_model.base.LinearRegression
```

In [31]:
```
modelo.fit(X, Y)
```

Out[31]:
```
LinearRegression(copy_X=True, fit_intercept=True, n_jobs=None, normalize=False)
```

In [38]:
```
print("Uma pizza de 20 coms devera custar: R$%.2f" %modelo.predict([20] [0]))
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
<ipython-input-38-61bf17b20cb0> in <module>
----> 1 print("Uma pizza de 20 coms devera custar: R$%.2f" %modelo.predict([20]
[0]))

~\AppData\Local\Continuum\anaconda3\lib\site-packages\sklearn\linear_model\bas
e.py in predict(self, X)
    219             Returns predicted values.
    220         """
--> 221         return self._decision_function(X)
    222
    223     _preprocess_data = staticmethod(_preprocess_data)

~\AppData\Local\Continuum\anaconda3\lib\site-packages\sklearn\linear_model\bas
e.py in _decision_function(self, X)
    202         check_is_fitted(self, "coef_")
    203
--> 204         X = check_array(X, accept_sparse=['csr', 'csc', 'coo'])
    205         return safe_sparse_dot(X, self.coef_.T,
    206                                dense_output=True) + self.intercept_

~\AppData\Local\Continuum\anaconda3\lib\site-packages\sklearn\utils\validation.
py in check_array(array, accept_sparse, accept_large_sparse, dtype, order, cop
y, force_all_finite, ensure_2d, allow_nd, ensure_min_samples, ensure_min_featur
es, warn_on_dtype, estimator)
    512                     "Reshape your data either using array.reshape(-1,
 1) if "
    513                     "your data has a single feature or array.reshape(1,
-1) "
--> 514                     "if it contains a single sample.".format(array))
    515             # If input is 1D raise error
    516             if array.ndim == 1:

ValueError: Expected 2D array, got scalar array instead:
array=20.
Reshape your data either using array.reshape(-1, 1) if your data has a single f
eature or array.reshape(1, -1) if it contains a single sample.
```

In [28]:
```
from IPython.display import image
image('linear.png')
```

```
---------------------------------------------------------------------------
ImportError                               Traceback (most recent call last)
<ipython-input-28-fe7291dd561b> in <module>
----> 1 from IPython.display import image
      2 image('linear.png')

ImportError: cannot import name 'image' from 'IPython.display' (C:\Users\tq814
\AppData\Local\Continuum\anaconda3\lib\site-packages\IPython\display.py)
```

In [ ]: