```
In [ ]:  # Scipy:
         # We have the min and max temperatures in a city In India for each months of t
         he year.
         # We would like to find a function to describe this and show it graphically, t
         he dataset given below.
         # Task:
         # 1. fitting it to the periodic function
         # 2. plot the fit
         # Data
         # Max = 39, 41, 43, 47, 49, 51, 45, 38, 37, 29, 27, 25
         # Min = 21, 23, 27, 28, 32, 35, 31, 28, 21, 19, 17, 18
```

```
In [37]:  # 1. fitting it to the periodic function
          #defining periodic function
          def yearly_temps(times, avg, ampl, time_offset):
              return (avg + ampl * np.cos((times + time_offset) * 1.8 * np.pi / times.ma
          x()))

          #identifying the curve for plot using scipy
          res_max, cov_max = optimize.curve_fit(yearly_temps, months,temp_max, [40, 20,
          0])
          res_min, cov_min = optimize.curve_fit(yearly_temps, months,temp_min, [-40, 20,
           0])
          print(res_max)
          print(res_min)
```

```
[ 39.10062829 -11.0872493    2.10332481]
[24.87112259 -7.89899664  1.60673368]
```

In [31]:
```
#2. plot the fit

days = np.linspace(0, 12, num=365)
plt.figure()
plt.plot(months,Max, 'ro')
plt.plot(days, yearly_temps(days, *res_max), 'r-')
plt.plot(months,Min, 'bo')
plt.plot(days, yearly_temps(days, *res_min), 'b-')
plt.xlabel('Month')
plt.ylabel('Temperature (°C)')
plt.show()
```
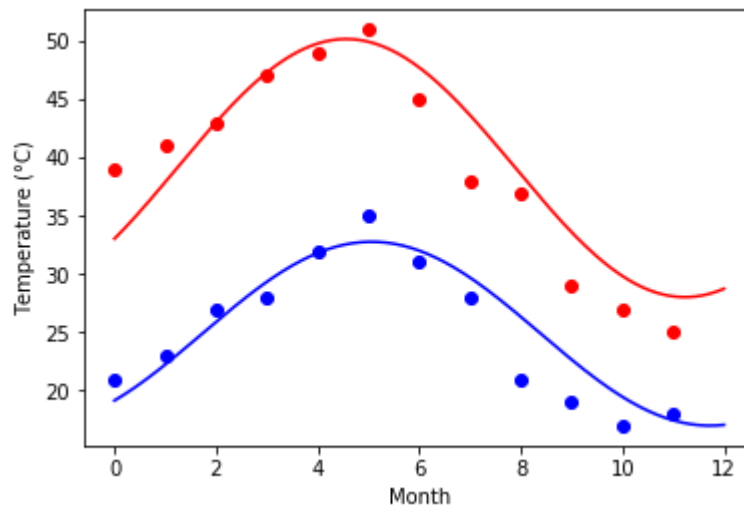

In [ ]:
```
# Matplotlib:
# This assignment is for visualization using matplotlib:
# data to use:
# url= https://raw.githubusercontent.com/Geoyi/Cleaning-Titanic-Data/master/ti
tanic_original.csv
# titanic = pd.read_csv(url)
# Charts to plot:
# 1. Create a pie chart presenting the male/female proportion
# 2. Create a scatterplot with the Fare paid and the Age, differ the plot colo
r by gender
```

In [38]:
```python
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
%matplotlib inline
data = pd.read_csv('https://raw.githubusercontent.com/Geoyi/Cleaning-Titanic-D
ata/master/titanic_original.csv')
data.head(5)
```

Out[38]:

|	pclass	survived	name	sex	age	sibsp	parch	ticket	fare	cabin	em
0	1.0	1.0	Allen, Miss. Elisabeth Walton	female	29.0000	0.0	0.0	24160	211.3375	B5	S
1	1.0	1.0	Allison, Master. Hudson Trevor	male	0.9167	1.0	2.0	113781	151.5500	C22 C26	S
2	1.0	0.0	Allison, Miss. Helen Loraine	female	2.0000	1.0	2.0	113781	151.5500	C22 C26	S
3	1.0	0.0	Allison, Mr. Hudson Joshua Creighton	male	30.0000	1.0	2.0	113781	151.5500	C22 C26	S
4	1.0	0.0	Allison, Mrs. Hudson J C (Bessie Waldo Daniels)	female	25.0000	1.0	2.0	113781	151.5500	C22 C26	S

In [39]:
```python
#1. Create a pie chart presenting the male/female proportion

s=round((data['sex'].value_counts()))/len(data)*100,2)
pd.DataFrame(s)
```

Out[39]:

	sex
male	64.35
female	35.57

In [48]:
```
labels = ['male','female']
sizes = data.sex.value_counts()
fig1, ax1 = plt.subplots()
ax1.pie(sizes, labels=labels, autopct='%1.1f%%', shadow=True, colors = ['Blue'
,'Red'])
#ax1.axis('equal')
plt.show()
```
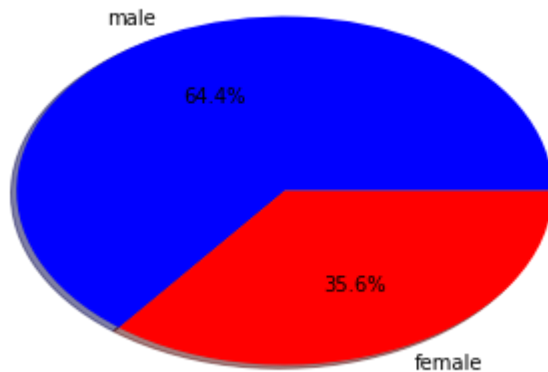

In [47]:
```
# 2. Create a scatterplot with the Fare paid and the Age, differ the plot colo
r by gender

plt.figure()
category1 = data[data.sex=='male'].plot.scatter('age', 'fare', color='blue',la
bel='male')
data[data.sex=='female'].plot.scatter('age', 'fare',color='red',label='female'
,ax=category1)
```

Out[47]: <matplotlib.axes._subplots.AxesSubplot at 0xbf21970>

<Figure size 432x288 with 0 Axes>