In [1]:

```
# Titanic Survivor Analysis

import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
%matplotlib inline
```

In [2]:

```
df=pd.read_csv('train.csv')
df.head(5)
```

Out[2]:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare
0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	7.2500
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	71.2833
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	7.9250
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1000
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	8.0500

In [3]:

```
len(df)
```

Out[3]:

```
891
```

In [4]:

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 891 entries, 0 to 890
Data columns (total 12 columns):
 #   Column       Non-Null Count  Dtype  
---  ------       --------------  -----  
 0   PassengerId  891 non-null    int64  
 1   Survived     891 non-null    int64  
 2   Pclass       891 non-null    int64  
 3   Name         891 non-null    object 
 4   Sex          891 non-null    object 
 5   Age          714 non-null    float64
 6   SibSp        891 non-null    int64  
 7   Parch        891 non-null    int64  
 8   Ticket       891 non-null    object 
 9   Fare         891 non-null    float64
 10  Cabin        204 non-null    object 
 11  Embarked     889 non-null    object 
dtypes: float64(2), int64(5), object(5)
memory usage: 83.7+ KB
```

In [5]:

```
df.describe()
```

Out[5]:

	PassengerId	Survived	Pclass	Age	SibSp	Parch	Fare
count	891.000000	891.000000	891.000000	714.000000	891.000000	891.000000	891.000000
mean	446.000000	0.383838	2.308642	29.699118	0.523008	0.381594	32.204208
std	257.353842	0.486592	0.836071	14.526497	1.102743	0.806057	49.693429
min	1.000000	0.000000	1.000000	0.420000	0.000000	0.000000	0.000000
25%	223.500000	0.000000	2.000000	20.125000	0.000000	0.000000	7.910400
50%	446.000000	0.000000	3.000000	28.000000	0.000000	0.000000	14.454200
75%	668.500000	1.000000	3.000000	38.000000	1.000000	0.000000	31.000000
max	891.000000	1.000000	3.000000	80.000000	8.000000	6.000000	512.329200

In [6]:

```
df.head()
```

Out[6]:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare
0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	7.2500
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	71.2833
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	7.9250
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1000
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	8.0500

In [7]:

```
df.count()
```

Out[7]:

```
PassengerId    891
Survived       891
Pclass         891
Name           891
Sex            891
Age            714
SibSp          891
Parch          891
Ticket         891
Fare           891
Cabin          204
Embarked       889
dtype: int64
```

In [8]:

```
df['Age'].min(),df['Age'].max()
```

Out[8]:

```
(0.42, 80.0)
```

In [9]:

```
df['Survived'].value_counts()
```

Out[9]:

```
0    549
1    342
Name: Survived, dtype: int64
```

In [10]:

```
df['Survived'].value_counts()*100 /len(df)
```

Out[10]:

```
0    61.616162
1    38.383838
Name: Survived, dtype: float64
```

In [11]:

```
df['Sex'].value_counts()
```

Out[11]:

```
male      577
female    314
Name: Sex, dtype: int64
```

In [12]:

```
df['Pclass'].value_counts()
```

Out[12]:

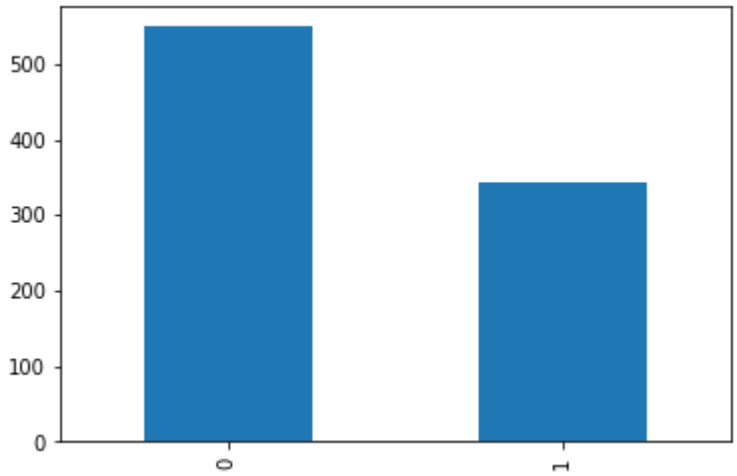
```
3    491
1    216
2    184
Name: Pclass, dtype: int64
```

In [13]:

```
df['Survived'].value_counts().plot.bar()
```

Out[13]:

```
<matplotlib.axes._subplots.AxesSubplot at 0x1a19a62d90>
```

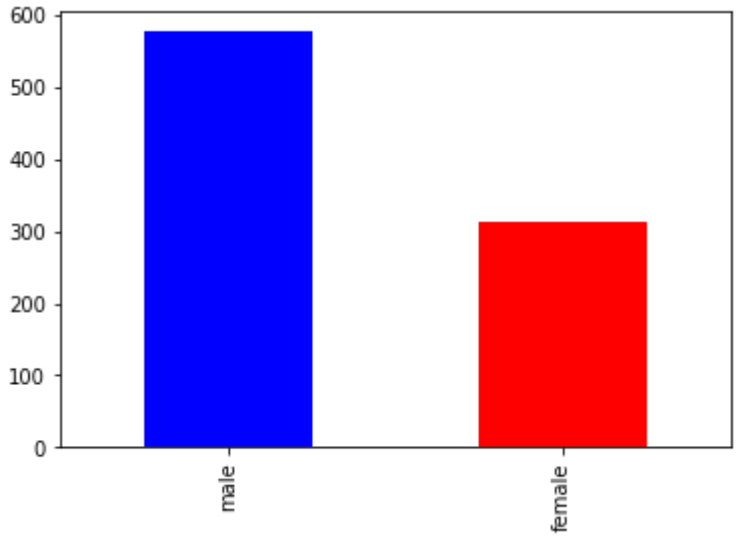


In [14]:

```
df['Sex'].value_counts().plot(kind='bar',color=['b','r'])
```

Out[14]:

```
<matplotlib.axes._subplots.AxesSubplot at 0x1a1a17c110>
```

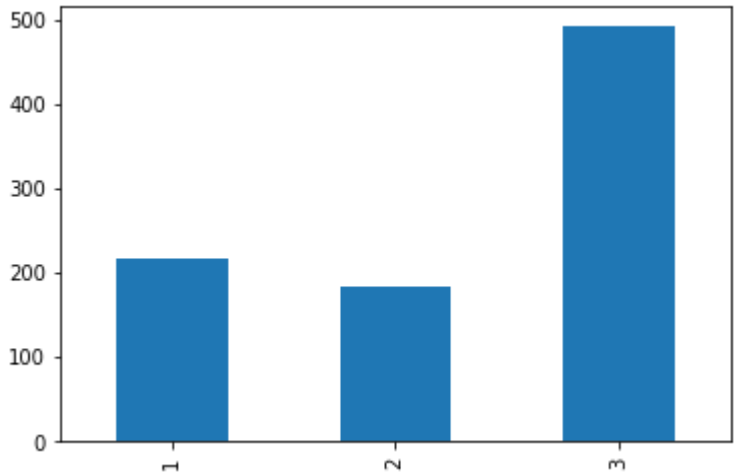


In [15]:

```
df['Pclass'].value_counts().sort_index().plot(kind='bar')
```

Out[15]:

```
<matplotlib.axes._subplots.AxesSubplot at 0x1a1a2d8610>
```

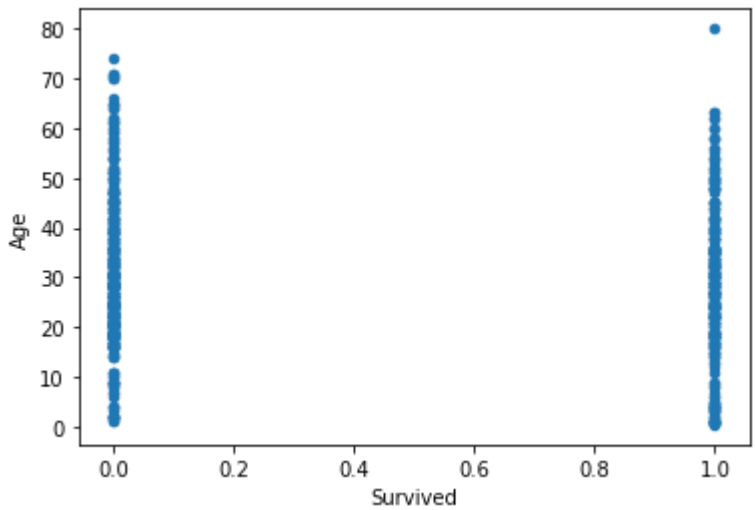


In [16]:

```
df.plot(kind='scatter',x='Survived',y='Age')
```

Out[16]:

```
<matplotlib.axes._subplots.AxesSubplot at 0x1a1a363ad0>
```

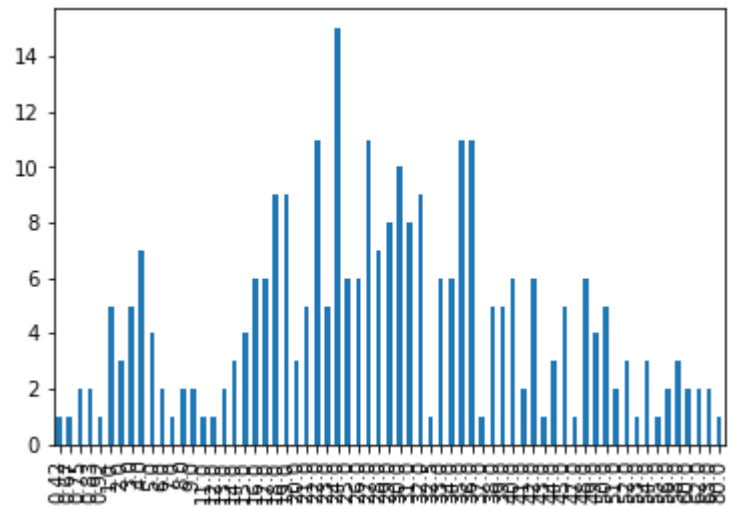


In [17]:

```
df[df['Survived']==1]['Age'].value_counts().sort_index().plot(kind='bar')
```

Out[17]:

```
<matplotlib.axes._subplots.AxesSubplot at 0x1a1a465490>
```



In [18]:

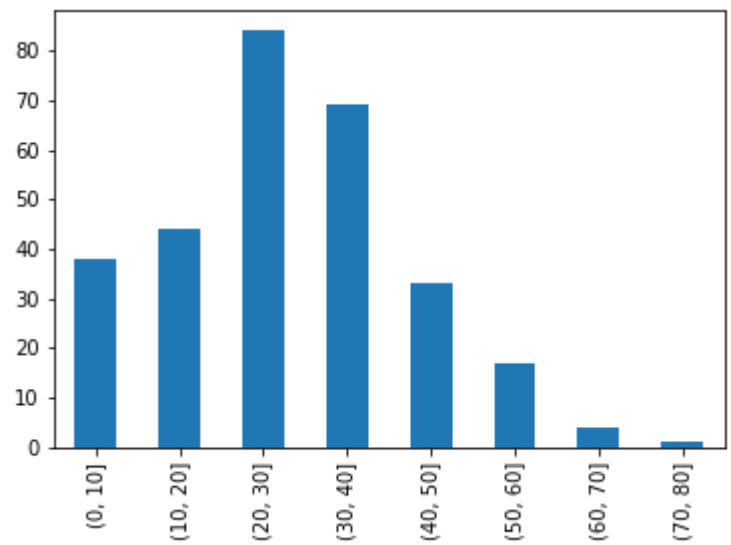
```
bins=[0,10,20,30,40,50,60,70,80]
df['AgeBin']=pd.cut(df['Age'],bins)
```

In [19]:

```
df[df['Survived']==1]['AgeBin'].value_counts().sort_index().plot(kind='bar')
```

Out[19]:

```
<matplotlib.axes._subplots.AxesSubplot at 0x1a1a62f4d0>
```

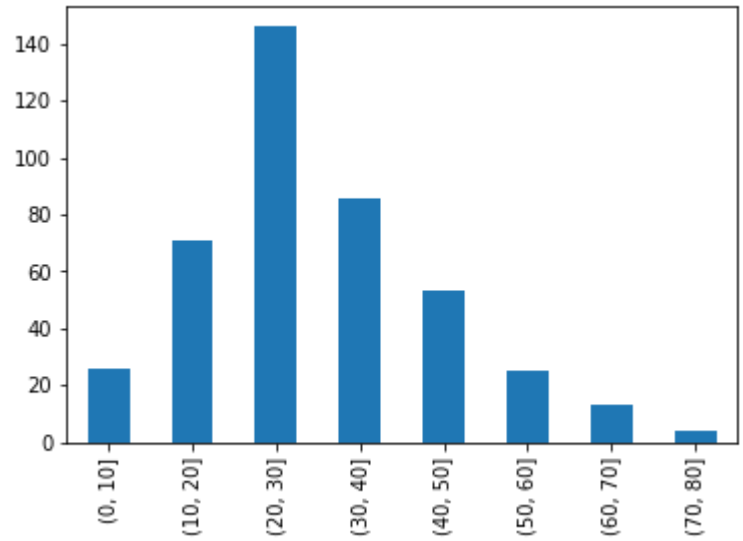


In [20]:

```
df[df['Survived']==0]['AgeBin'].value_counts().sort_index().plot(kind='bar')
```

Out[20]:

```
<matplotlib.axes._subplots.AxesSubplot at 0x1a1a765890>
```



In [21]:

```
df.head(5)
```

Out[21]:

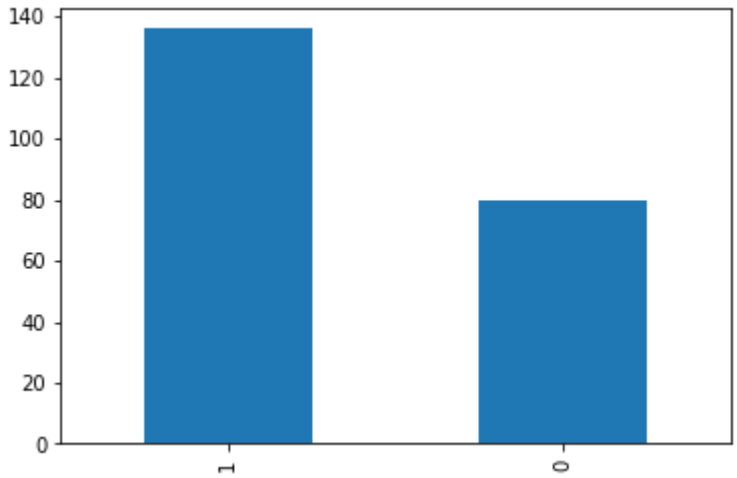
	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare
0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	7.2500
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	71.2833
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	7.9250
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1000
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	8.0500

In [22]:

```
df[df['Pclass']==1]['Survived'].value_counts().plot(kind='bar')
```

Out[22]:

```
<matplotlib.axes._subplots.AxesSubplot at 0x1a1a7cb5d0>
```

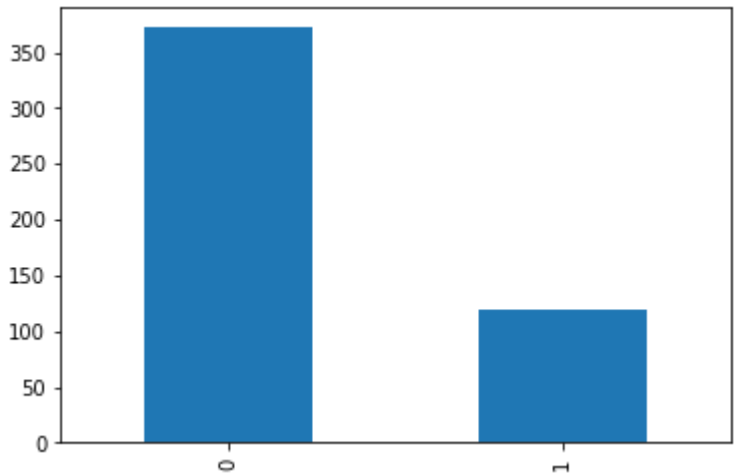


In [23]:

```
df[df['Pclass']==3]['Survived'].value_counts().plot(kind='bar')
```

Out[23]:

```
<matplotlib.axes._subplots.AxesSubplot at 0x1a199b9610>
```

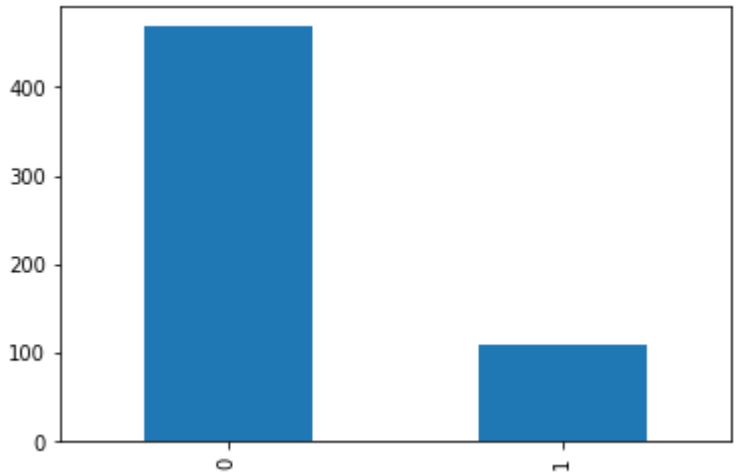


In [24]:

```
df[df['Sex']=='male']['Survived'].value_counts().plot(kind='bar')
```

Out[24]:

```
<matplotlib.axes._subplots.AxesSubplot at 0x1a1a94c450>
```

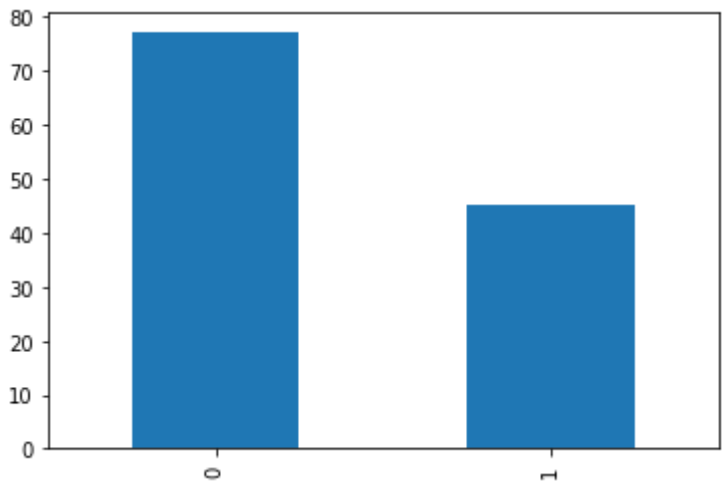


In [25]:

```
df[(df['Sex']=='male') & (df['Pclass']==1)]['Survived'].value_counts().plot(kind
='bar')
```

Out[25]:

```
<matplotlib.axes._subplots.AxesSubplot at 0x1a1aa14e90>
```



In [26]:

```
df.head(5)
```

Out[26]:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare
0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	7.2500
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	71.2833
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	7.9250
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1000
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	8.0500

In [ ]:

```

```