```
In [1]: import numpy as np
        import pandas as pd
        import matplotlib.pyplot as plt
        import seaborn as se
```

```
In [13]: sp=pd.read_csv("/home/student/Desktop/academic_performance.csv")
```

```
In [4]: sp.head(6)
```

Out[4]:

	Math Score	Reading Score	Writing Score	Placement score	club join year	Placement offer count
0	63	84	64	84	2020	2
1	71	80	76	86	2018	3
2	64	81	65	81	2020	2
3	71	85	77	91	2018	3
4	68	86	76	92	2021	3
5	79	86	61	100	2019	3

```
In [6]: sp.isnull()
```

Out[6]:

	Math Score	Reading Score	Writing Score	Placement score	club join year	Placement offer count
0	False	False	False	False	False	False
1	False	False	False	False	False	False
2	False	False	False	False	False	False
3	False	False	False	False	False	False
4	False	False	False	False	False	False
5	False	False	False	False	False	False

```
In [7]: sp=pd.read_csv("/home/student/Desktop/academic_performance.csv")
```

```
In [8]: sp.isnull()
```

Out[8]:

	Math Score	Reading Score	Writing Score	Placement score	club join year	Placement offer count
0	True	False	False	False	False	True
1	False	False	False	False	False	False
2	False	False	False	False	False	False
3	False	False	False	False	False	False
4	False	False	False	False	False	False
5	False	False	False	False	False	False

In [11]:
```python
series=pd.isnull(sp["Math Score"])
sp[series]
```

Out[11]:

	Math Score	Reading Score	Writing Score	Placement score	club join year	Placement offer count
0	NaN	84	64	84	2020	NaN

In [12]:
```python
from sklearn.preprocessing import LabelEncoder
le = LabelEncoder()
```

In [15]:
```python
sp['Gender']=le.fit_transform(sp['Gender'])
newdf=sp
sp
```

Out[15]:

	Math Score	Reading Score	Writing Score	Placement score	club join year	Placement offer count	Gender
0	NaN	84	64	84	2020	NaN	1
1	71.0	80	76	86	2018	3.0	0
2	64.0	81	65	81	2020	2.0	1
3	71.0	85	77	91	2018	3.0	0
4	68.0	86	76	92	2021	3.0	1
5	79.0	86	61	100	2019	3.0	0

In [24]:
```python
sp.dropna(how = 'all')
```

Out[24]:

	Math Score	Reading Score	Writing Score	Placement score	club join year	Placement offer count	Gender
0	NaN	84	64	84	2020	NaN	1
1	71.0	80	76	86	2018	3.0	0
2	64.0	81	65	81	2020	2.0	1
3	71.0	85	77	91	2018	3.0	0
4	68.0	86	76	92	2021	3.0	1
5	79.0	86	61	100	2019	3.0	0

In [25]:
```python
sp.dropna(axis=1)
```

Out[25]:

	Reading Score	Writing Score	Placement score	club join year	Gender
0	84	64	84	2020	1
1	80	76	86	2018	0
2	81	65	81	2020	1
3	85	77	91	2018	0

Reading Score   Writing Score   Placement score   club join year   Gender

In [26]:
```python
new_data =  sp.dropna(axis=0,how='any')
new_data
```

Out[26]:

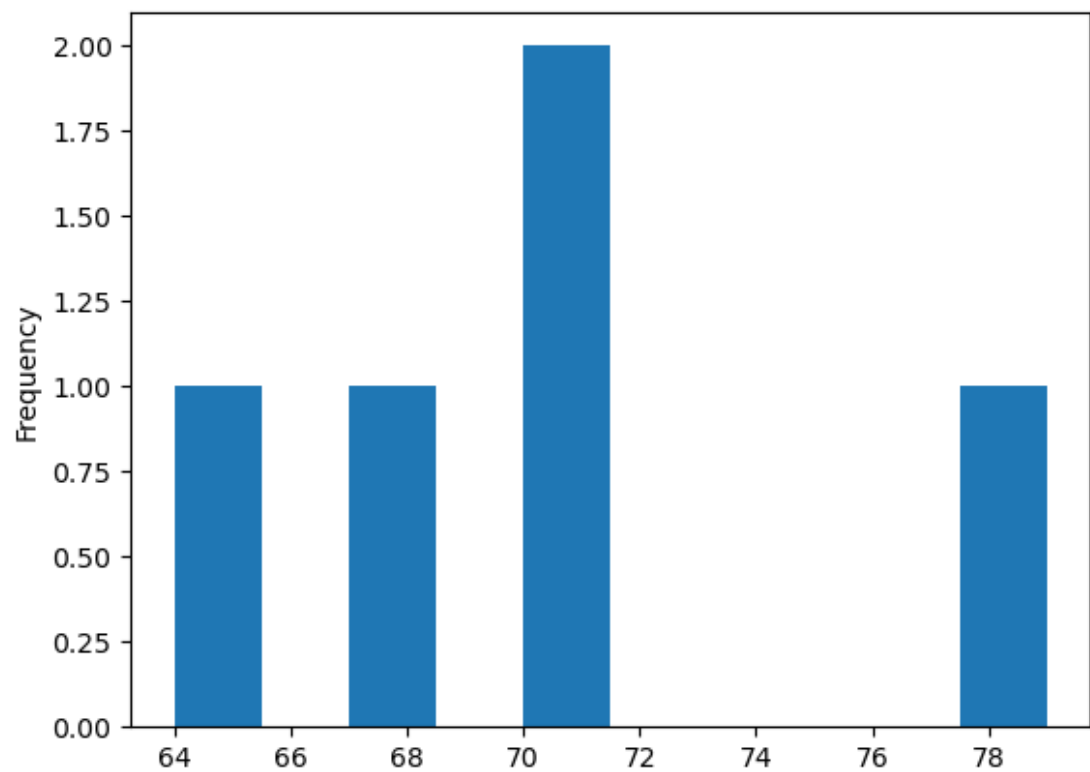|	Math Score	Reading Score	Writing Score	Placement score	club join year	Placement offer count	Gender
1	71.0	80	76	86	2018	3.0	0
2	64.0	81	65	81	2020	2.0	1
3	71.0	85	77	91	2018	3.0	0
4	68.0	86	76	92	2021	3.0	1
5	79.0	86	61	100	2019	3.0	0

In [30]:
```python
print(np.where(sp['Reading Score']<90))
```

(array([0, 1, 2, 3, 4, 5]),)

In [32]:
```python
fig, ax = plt.subplots(figsize = (18,10))
ax.scatter(sp['Placement score'],sp['Placement offer count'])
plt.show()
```
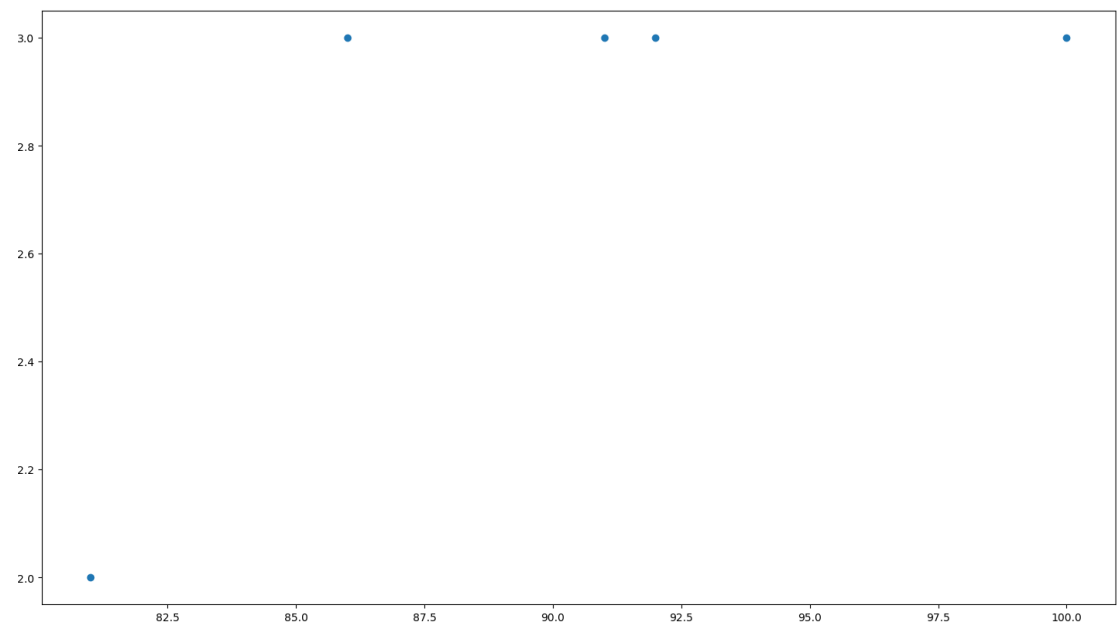
In [35]:
```python
sp['Math Score'].plot(kind = 'hist')
plt.show()
```


In [ ]: