In [17]:

```
import pandas as pd
import numpy as np
thu15_29=pd.read_csv(r'C:\Users\gwc\Documents\thu15_29.csv')
print(thu15_29)
```

```
   number  pens  notebooks  textbooks  drawing sheets  total units  \
0       1    10         20         10              20           40
1       2    20         10         20              10           50
2       3    10         20         10              20           60
3       4    20         10         20              10           70
4       5    10         20         10              20           80
5       6    20         20         20              10           90
6       7    10         20         10              20           40
7       8    20         10         20              10           50
8       9    10         20         10              20           60
9      10    20         10         20              10           70

   total profit
0            70
1            60
2            50
3            40
4            90
5            80
6            70
7            60
8            50
9            40
```

In [18]:

```
thu15_29.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 10 entries, 0 to 9
Data columns (total 7 columns):
 #   Column          Non-Null Count  Dtype
---  ------          --------------  -----
 0   number          10 non-null     int64
 1   pens            10 non-null     int64
 2   notebooks       10 non-null     int64
 3   textbooks       10 non-null     int64
 4   drawing sheets  10 non-null     int64
 5   total units     10 non-null     int64
 6   total profit    10 non-null     int64
dtypes: int64(7)
memory usage: 688.0 bytes
```

In [19]:

```
import pandas as pd
import numpy as np
thu15_29.head(5)
```

Out[19]:

	number	pens	notebooks	textbooks	drawing sheets	total units	total profit
0	1	10	20	10	20	40	70
1	2	20	10	20	10	50	60
2	3	10	20	10	20	60	50
3	4	20	10	20	10	70	40
4	5	10	20	10	20	80	90

In [20]:

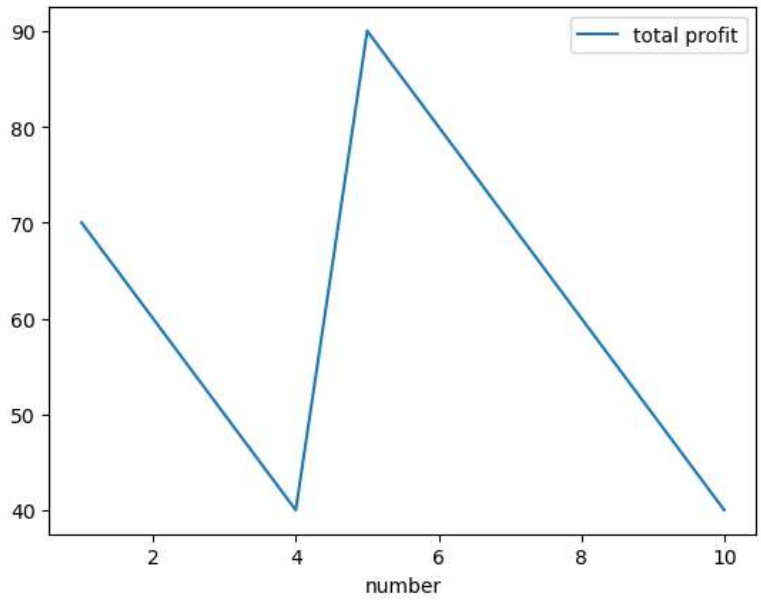
```
import pandas as pd
import numpy as np
thu15_29.tail(5)
```

Out[20]:

	number	pens	notebooks	textbooks	drawing sheets	total units	total profit
5	6	20	20	20	10	90	80
6	7	10	20	10	20	40	70
7	8	20	10	20	10	50	60
8	9	10	20	10	20	60	50
9	10	20	10	20	10	70	40

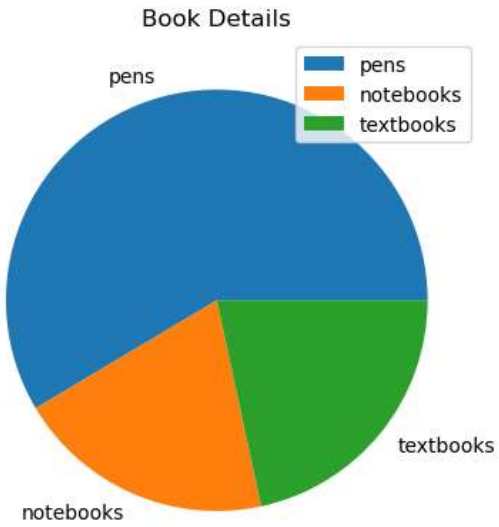
In [22]:

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
thu15_29.plot(x='number',y='total profit')
plt.show()
```



In [15]:

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
pens=[100,150,200,250,300,350,400,450,500,550]
notebooks=[20,40,60,80,100,120,140,160,180,200]
textbooks=[30,50,70,90,110,130,150,170,190,210]
slices=[sum(pens),sum(notebooks),sum(textbooks)]
tasks=['pens','notebooks','textbooks']
plt.pie(slices,labels=tasks)
plt.title('Book Details')
plt.legend()
plt.show()
```



In [ ]:

In [ ]: