

ABC Company purchased a machine for \$84,000. The machine is expected to last for five years and then be sold for \$4,000. It has been rated to produce 640,000 units over its life and the actual units produced were as follows:

| Year of Production | Number of Units Produced |
|---------------------------|---------------------------------|
| 1 | 100,000 |
| 2 | 120,000 |
| 3 | 130,000 |
| 4 | 150,000 |
| 5 | 160,000 |

Required:

Prepare a calculation to show the annual amortization based on the following independent assumptions:

- a) Straight Line Method
- b) Units of Production Method
- c) Double Declining Balance Method

NOTE: Do not round the per unit amortization.
Round the amortization expense to the nearest dollar

Working Paper

Straight Line:

| | |
|----------------------------------|--|
| Cost | |
| Estimated Salvage Value | |
| Maximum Accumulated Amortization | |
| Life in Years | |
| Annual Amortization | |

Units of Production:

| | |
|----------------------------------|--|
| Cost | |
| Estimated Salvage Value | |
| Maximum Accumulated Amortization | |
| Maximum Units | |
| Amortization per Unit | |

Double Declining:

| | |
|-----------------------|--|
| 100 Percent | |
| Life in Years | |
| Single Declining Rate | |
| Times Two | |
| Double Declining Rate | |

| Year | Beginning Net Book Value | Rate | Amortization | Ending Net Book Value |
|------|--------------------------|------|--------------|-----------------------|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |

Accumulated Amortization Amounts:

| Year | Straight Line | Units of Production | Double Declining |
|--------------|---------------|---------------------|------------------|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| Total | | | |

Answer

Straight Line:

| | |
|----------------------------------|--------|
| Cost | 84,000 |
| Estimated Salvage Value | 4,000 |
| Maximum Accumulated Amortization | 80,000 |
| Life in Years | 5 |
| Annual Amortization | 16,000 |

Units of Production:

| | |
|----------------------------------|---------|
| Cost | 84,000 |
| Estimated Salvage Value | 4,000 |
| Maximum Accumulated Amortization | 80,000 |
| Maximum Units | 640,000 |
| Amortization per Unit | \$0.125 |

Double Declining

| | |
|-----------------------|------|
| 100 Percent | 100% |
| Life in Years | 5 |
| Single Declining Rate | 20% |
| Times Two | 2 |
| Double Declining Rate | 40% |

| Year | Beginning Net Book Value | Rate | Amortization | Ending Net Book Value |
|------|--------------------------|------|--------------|-----------------------|
| 1 | 84,000 | 40% | 33,600 | 50,400 |
| 2 | 50,400 | 40% | 20,160 | 30,240 |
| 3 | 30,240 | 40% | 12,096 | 18,144 |
| 4 | 18,144 | 40% | 7,258 | 10,886 |
| 5 | 10,886 | 40% | 4,354 | 6,532 |

Accumulated Amortization Amounts:

| Year | Straight Line | Units of Production | Double Declining |
|--------------|---------------|---------------------|------------------|
| 1 | 16,000 | 12,500 | 33,600 |
| 2 | 16,000 | 15,000 | 20,160 |
| 3 | 16,000 | 16,250 | 12,096 |
| 4 | 16,000 | 18,750 | 7,258 |
| 5 | 16,000 | * 17,500 | 4,354 |
| Total | 80,000 | 80,000 | 77,468 |

* Can not be 160,000 times \$0.125 (\$20,000) as this would go beyond the Maximum Accumulated Amortization.