PPE Handout – Solution

Consider each of the following expenditures. Put an (E) if it is an expense and a (C) if it should be capitalized.

1. Before new equipment was used, test runs were conducted at a cost of $6,250.
    _____

2. A used truck was purchased and a new carburetor was installed for $800.
    _____

3. A company purchases a new engine for one of its freight trains at a cost of $45,000.
    _____

4. $30 worth of pens were purchased for the office.
    _____

5. A new security system was installed at an old warehouse for $35,000.
    _____

6. A custodian is hired to clean the office at night.
    _____

Solutions:

1. *Capitalize*
2. *Capitalize*
3. *Capitalize*
4. *Expense*
5. *Capitalize*
6. *Expense*

Consider each of the following expenditures. Put an (E) if it is an expense and a (C) if it should be capitalized.

1. Paid $4,000 in legal fees to register a copyright
   _____

2. Purchased $20 of printer ink.
   _____

3. Paid $1,750 for a new computer.
   _____

4. Repaired a copier at a cost of $300.
   _____

5. Paid the CEO's health insurance premiums for $6,250.
   _____

6. Destroyed an old building for $125,000 to make way for a new office.
   _____

Solutions:

1. *Capitalize or Expense (if you think the amount is not material)*
2. *Expense*
3. *Capitalize*
4. *Expense*
5. *Expense*
6. *Capitalize*

On January 1st, 2013 Gretzky Corp purchased $300,000 of equipment. The equipment has an expected life of 10 years and a residual value of $20,000.

Calculate the depreciation expense over the next 3 years using:

1. Straight-line
2. Sum-of-the-years digits
3. Double-declining-balance

Solution

1.   *Straight-line: ($300,000 – $20,000)/10 years = $28,000/year*

2.   *Sum-of-the-years digits*

Year	Depr. Base		Depr. Fraction[1]	Depreciation Expense	Book Value End of Year
1	$280,000	×	10/55	$50,909	$249,091
2	280,000	×	9/55	45,818	$203,273
3	280,000	×	8/55	40,727	$162,546

3.   *Double-Declining-Balance*:

Year	Book Value		Rate[2]	Depreciation Expense	Book Value End of Year
1	$300,000	×	0.20	$60,000	$240,000
2	240,000	×	0.20	48,000	$192,000
3	192,000	×	0.20	38,400	$153,600

[1] The depreciable fraction is found by taking remaining years of life as of the beginning of the year and dividing by the sum-of-the-years digits using the formula $(n*(n+1)/2)$. The sum-of-the-years digits is $(10*11)/2$ or 55 in this example.

[2] The rate is found by taking the straight-line rate as $1/n$ where $n = 10$ years of life in this example and then multiplying by 2 for DDB (so $1/10 \times 2 = .2$).

On January 1st, 2013 Dryden Inc. purchased $800,000 of equipment. The equipment has an expected life of 15 years and a residual value of $50,000.

1. Calculate the annual depreciation expense and end of year book value for the first 3 years using the following methods:
   a. Straight-line
   b. Double-declining-balance
2. Recalculate your answers from part 1 assuming there was no residual value.

Solutions

1. *Straight Line: (800,000 – 50,000)/15 = $50,000 in depreciation expense/year*
   BV in Year 1: 800,000 – 50,000 = 750,000
   BV in Year 2: 750,000 – 50,000 = 700,000
   BV in Year 3: 700,000 – 50,000 = 650,000

   Double Declining:
   *Year 1: 800,000 * (1/15) * 2 = 106,667 of depreciation expense. BV = 800,000 – 106,667 = 693,333*

   *Year 2: 693,333 * (1/15) * 2 = 92,444 of depreciation expense. BV = 693,333 – 92,444 = 600,889*

   *Year 3: 600,889 * (1/15) * 2 = 80,119 of depreciation expense. BV = 600,889 – 80,119 = 520,770*

2. *Straight Line: (800,000 – 0)/15 = $53,333 in depreciation expense/year*
   BV in Year 1: 800,000 – 53,333 = 746,667
   BV in Year 2: 746,667 – 53,333 = 693,334
   BV in Year 3: 693,334 – 53,334 = 640,000

   Double Declining (Unchanged):
   *Year 1: 800,000 * (1/15) * 2 = 106,667 of depreciation expense. BV = 800,000 – 106,667 = 693,333*

   *Year 2: 693,333 * (1/15) * 2 = 92,444 of depreciation expense. BV = 693,333 – 92,444 = 600,889*

   *Year 3: 600,889 * (1/15) * 2 = 80,119 of depreciation expense. BV = 600,889 – 80,119 = 520,770*