1. After planning to build a new manufacturing plant, TC Casual Wear purchased a lot on which a small building was located. The following costs were incurred by TC Casual Wear in purchasing land: cash price, $125,000; legal fees, $1,250; removal of old building, $1,800; clearing and grading, $2,400; installation of fencing, $1,100.

For the value of the land, when we have an existing building on the land, and the building will be torn down for construction of a new building, we must include the cost of removal of the building and prepping the land for construction in the value of the land.

Fencing, paving a parking lot and putting up lights are all part of land improvements.

**Required:**

Calculate the value of the land and land improvements.

Land = 125000+1250+1800+2400 = 130450

Land Improvements = 1100

2. Your company incurs the following costs in purchasing equipment: the invoice price is $23,500; shipping, $600; installation and testing, $3,625; one-year insurance policy, $1,500.

When you buy a new machine, you must include all the costs necessary to get the machine up and running. Except if there is a repair required. The cost of the machine will include, the cost of the machine, the shipping, installation and testing, any special needs for the machine, if you purchased insurance for the shipment of the machine that would be included. But not the one year insurance policy (prepaid insurance).

If you are purchasing a used piece of equipment, then, you would include any necessary repairs needed to get the machine in working operation.

**Required:**

Prepare a calculation to show the cost of this machine.

Machine = 23500+600+3625 = 27725
3. On March 20 Burns & Burns Inc. purchased land, a building and land improvements for the cash price of $194,000. Management’s best estimate of the value of the land was $86,200; of the land improvements, $17,700; and the building, $97,100.

A lump sum purchase, this means we are buying several assets at once. And we need to calculate the value for each asset that will appear on the balance sheet.

Step 1: Calculate the total estimated value of all the assets
Step 2: Calculate a percent for each asset based on the estimated value/total estimated value
Step 3: Use the percent times the purchase price to get the actual value of the assets being purchased.

**Required:**
Prepare a calculation showing the allocation of the total cost amongst the three items purchased. (Round your calculations to two decimal places)

<table>
<thead>
<tr>
<th>Asset</th>
<th>Estimate</th>
<th>Total Estimate</th>
<th>Percent (step 2)</th>
<th>Cash Price</th>
<th>Value of Asset (step 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>86200</td>
<td>/201000</td>
<td>0.43</td>
<td>X194000</td>
<td>83420</td>
</tr>
<tr>
<td>Land Improvements</td>
<td>17700</td>
<td>/201000</td>
<td>0.09</td>
<td>X194000</td>
<td>17460</td>
</tr>
<tr>
<td>Building</td>
<td>97100</td>
<td>/201000</td>
<td>0.48</td>
<td>X194000</td>
<td>93120</td>
</tr>
<tr>
<td>Total</td>
<td>201000</td>
<td>(step 1)</td>
<td>1.00</td>
<td></td>
<td>194000</td>
</tr>
</tbody>
</table>

4. RT Company installed a computerized machine in its factory at a cost of $84,600 on January 3, 2020. The machine has a useful life of 5 years or 700,000 units with a $14,600 trade-in value. RT Company’s year – end is December 31.

Residual Value or Trade-In Value, this is the amount we feel we can sell the asset for at the end of its useful life.

<table>
<thead>
<tr>
<th>Year</th>
<th>Units Produced</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>75,000</td>
</tr>
<tr>
<td>2021</td>
<td>180,000</td>
</tr>
<tr>
<td>2022</td>
<td>135,000</td>
</tr>
<tr>
<td>2023</td>
<td>190,000</td>
</tr>
<tr>
<td>2024</td>
<td>150,000</td>
</tr>
</tbody>
</table>

730000 – 700000 = 30000 extra units produced above our original estimation

**Required:**
Calculate the depreciation for each year of this machine’s life using the following methods:

A) Straight – line = Cost – Residual Value = Depreciable Amount = Depreciation for the Year Estimated Useful Life

\[ \frac{84600 - 14600}{5} = 14000/\text{year} \]

The asset is purchased on January 3, 2020 and the year end is December 31, 2020 = 1 Year

If the asset is not used for a whole year in the first year, we then take the Depreciation Per Year and multiply by the months used and divide that by 12.
If the asset is purchased May 19, 2020 and the year end is December 31, 2020 = 7 months
14000 x 7/12 = 8167 for the 7 months
We would not count the month of May and we would start with June and go June to December.

Straight line depreciation is affected by a partial year depreciation
Partial Year Depreciation in the first year:
When counting months going forward in time, use the 15th as the dividing point.
So, if it the date is before the 15th, count that month in your calculation.
If the date is after the 15th, do not count that month and go the next month for your
counting of months.

B) Units – of – production method.
This method is not affected by partial year depreciation because when calculating
depreciation we use the actual units produced. What that means is in the first year, the
actual units produced will be smaller reflecting that we have not had the asset for very
long.

\[
U-of-P = \text{Cost} – \text{Residual Value} = \text{Depreciable Amount} = \text{Depreciation Per Unit} \\
\text{Estimated Units of} \\
\text{Production} \\
\text{Depreciation Per Unit} \times \text{Actual Units Produced in the year}
\]

\[
84600 – 14600 = \frac{70,000}{700,000} \text{units} = \$0.10/\text{unit}
\]

When depreciating using units-of-production for the entire life of the asset, you must
depreciate only the number of units that were estimated (700,000).
If you produce more units than 700,000 you cannot depreciate those extra units.
So, when you go over, you must subtract the amount you went over by from the last
year of production.
If you produce less than 700,000, then, you need to add more depreciation to get to the
700,000 units.
So, you can only depreciate your asset as much as your depreciable amount is ($70,000).

<table>
<thead>
<tr>
<th>Year</th>
<th>Depreciation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>75000 x 0.10 = 7500</td>
</tr>
<tr>
<td>2021</td>
<td>180000 x 0.10 = 18000</td>
</tr>
<tr>
<td>2022</td>
<td>135000 x 0.10 = 13500</td>
</tr>
<tr>
<td>2023</td>
<td>190000 x 0.10 = 19000</td>
</tr>
<tr>
<td>2024</td>
<td>150000 – 30000 = 120000 x 0.10 = 12000</td>
</tr>
</tbody>
</table>

Academic Success Centre
These questions were compiled by Michael Reimer for the Academic Success Centre.
C) Double Diminishing – balance method = \( \frac{2}{\text{estimated useful life}} \times \text{carrying value} = \)
Depreciation for the year \( \times \) months used/12

Only in the first year does the carrying value equal the cost because there has been no depreciation yet.

January 3rd to December 31st = 1 Year
Carrying Value = Cost – Accumulated Depreciation
This method does not account for the residual value. But, you assets carrying value cannot go below the residual value.
This method is also affected by partial year depreciation.

2020 = \( \frac{2}{5} \times 84600 = 33840 \)
2021 = \((84600 – 33840) \times \frac{2}{5} = 50760 \times \frac{2}{5} = 20304 \)
2022 = \((84600 – 33840 – 20304) \times \frac{2}{5} = 30456 \times \frac{2}{5} = 12182.40 \)
2023 = \(84600 – 33840 – 20304 – 12182.40 = 18273.60 – 14600 = 3673.60 \)
2024 = 0 because the carrying amount is now equal to the residual value
Residual Value = 14600

When your carrying amount starts to get very close to your residual value, you cannot do the calculation of \( \frac{2}{\text{estimated useful life}} \). Instead, you subtract the carrying value by the residual value to get your depreciation.
5. On April 4th, 2020, BD Excavating Services purchased a trencher for $400,000. The machine was expected to have a five year life and an estimated residual value of $40,000. In early January of 2022, it was decided that the machine would last a total of 8 years and have a new estimated residual value of $14,000. BD Excavating Service’s year – end is December 31.

2 Criteria’s for revision:
1. Change in the useful life of the asset
2. Change in the residual value

Required:

A) Using straight – line depreciation, calculate the depreciation for the trencher for 2020 to the nearest month.

Step 1: Calculate the depreciation for Year 1 (2020)

SL = 400000 – 40000 = 360000/5 = 72000 x 9/12 = 54000
April 4 => December 31 = 9 months

The half year rule means that we charge half year of depreciation in the first year no matter when we buy the asset.
To the nearest month, means we figure out the months actually used in the first year.

B) Calculate the carrying amount of this trencher at the end of 2021.

Step 2: Calculate the accumulated depreciation up to the date of revision of depreciation
2020 = 54000
2021 = 72000
Accumulated Depreciation = 54000 + 72000 = 126000

Step 3: Calculate the carrying amount just before the revision of depreciation
Carrying Amount = Cost – Accumulated Depreciation = 400000 – 126000 = 274000

C) Using straight – line depreciation, calculate the revised depreciation for 2022.

When the question tells us that the asset will last a total of 8 years after we have already begun depreciating the asset, we need to subtract the time already depreciated to figure out the time remaining in the asset life.

If the question says, the asset will last another 8 years, this means the asset will last 8 more years beyond what has already been depreciated, so, we use the 8 years.

Step 4: Calculate the remaining time of the assets life
Time = 8 years – 1 year and 9 months = 8 – 1 9/12 = 8 – 1.75 = 6.25 years remaining

To calculate the depreciable amount we are going to subtract the carrying amount by the new residual value

Step 5: Calculate the new depreciable amount using the carrying value – the new residual value
274000 – 14000 = 260000

Academic Success Centre
These questions were compiled by Michael Reimer for the Academic Success Centre.
Step 6: Calculate the Revised Depreciation

\[ \frac{260000}{6.25 \text{ years}} = 41600/\text{revised depreciation per year} \]

D) Prepare the necessary year-end adjusting entry to record the revised depreciation for 2022.

<table>
<thead>
<tr>
<th>Date</th>
<th>Account Titles and Explanations</th>
<th>REF</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec 31</td>
<td>Depreciation Expense</td>
<td>41600</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accumulated Depreciation</td>
<td></td>
<td>41600</td>
<td></td>
</tr>
</tbody>
</table>

6. RH Company purchased equipment on January 3, 2019, for $95,000. The equipment had an estimated useful life of eight years and a residual value of $5,000. The company has a December 31 year end and uses straight-line depreciation. On December 31, 2021, the company tests for impairment and determines that the equipment’s recoverable amount is $55,000.

Impairment loss takes place when the assets carrying amount is greater than the recoverable amount.

**Required:**

A) Calculate the equipment’s carrying amount at December 31, 2021 (after recording the annual depreciation for 2021).

\[ 95000 - 5000 = 90000/8 = 11250 \]
\[ \text{January 3} \Rightarrow \text{December 31} = 1 \text{ Year (2019)} \]
\[ 2019 = 11250 \]
\[ 2020 = 11250 \]
\[ 2021 = 11250 \]
\[ \text{Accumulated Depreciation to the end of 2021} = 33750 \]
\[ \text{Carrying Amount} = 90000 - 33750 = 56250 \]

B) Calculate impairment loss if the carrying amount is more than recoverable amount.

\[ \text{Impairment Loss} = \text{Carrying Amount} - \text{Recoverable Amount} = 56250 - 55000 = 1250 \]
C) Prepare a general journal entry for December 31, 2021, to record impairment loss.

<table>
<thead>
<tr>
<th>Date</th>
<th>Account Titles and Explanations</th>
<th>REF</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec 31</td>
<td>Impairment Loss</td>
<td></td>
<td>1250</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accumulated Depreciation – Machine</td>
<td></td>
<td>1250</td>
<td></td>
</tr>
</tbody>
</table>

7. EC Industries purchased and installed a machine on January 3, 2016, at a total cost of $185,500 (Debit to Machine). Straight line depreciation was taken each year for four years, based on the assumption of a seven year life and no residual value. The machine was disposed of on July 2, 2020, during its fifth year of operation. The company had recorded $119,250 (Accumulated Depreciation with a credit balance) of accumulated depreciation.

When selling an asset with accumulated depreciation, you must remove the asset at the cost you paid to buy it (I must credit the asset we are selling) and we must remove the accumulated depreciation (I must debit the accumulated depreciation to remove it from the company’s books).

**Required:**

Prepare a general journal entry for each of the following unrelated assumptions:

A) The machine is sold for $70,000 cash.

Carrying Amount = $185500 – $119250 = $66250
Gain = $70000 (Cash Received) – $66250 (Carrying Amount) = $3750 (Gain which are credits)

<table>
<thead>
<tr>
<th>Date</th>
<th>Account Titles and Explanations</th>
<th>REF</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 2</td>
<td>Cash</td>
<td></td>
<td>70000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accumulated Depreciation – Machine</td>
<td></td>
<td>119250</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gain on disposal</td>
<td></td>
<td></td>
<td>3750</td>
</tr>
<tr>
<td></td>
<td>Machine</td>
<td></td>
<td></td>
<td>185500</td>
</tr>
</tbody>
</table>
B) The machine is destroyed in a fire and EC Industries receives an insurance settlement of $60,000.

Loss = 60000 (cash received) – 66250 (carrying amount) = -6250 (Loss which is a debit)

<table>
<thead>
<tr>
<th>General Journal</th>
<th>Page _____</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Account Titles and Explanations</td>
</tr>
<tr>
<td>July 2</td>
<td>Cash</td>
</tr>
<tr>
<td></td>
<td>Accumulated Depreciation - Machine</td>
</tr>
<tr>
<td></td>
<td>Loss on disposal</td>
</tr>
<tr>
<td></td>
<td>Machine</td>
</tr>
</tbody>
</table>

C) The machine and $60,000 cash was traded for a new machine of like purpose. The old machine’s fair value is $70,000.

Because the fair value that we are receiving on the old machine is greater than the carrying amount of the old machine, there will be gain on exchange of assets.

Gain = 70000 (fair value) – 66250 (carrying amount) = +3750 (gain)

If the old machines fair value is less than the carrying amount of the old machine, there will be a loss on exchange of assets.

<table>
<thead>
<tr>
<th>General Journal</th>
<th>Page _____</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Account Titles and Explanations</td>
</tr>
<tr>
<td>July 2</td>
<td>Machine</td>
</tr>
<tr>
<td></td>
<td>Accumulated Depreciation – Machine</td>
</tr>
<tr>
<td></td>
<td>Gain on disposal</td>
</tr>
<tr>
<td></td>
<td>Cash</td>
</tr>
<tr>
<td></td>
<td>Machine</td>
</tr>
</tbody>
</table>

When trading for another asset, and we know the fair value of the old asset we are trading. The new assets value is recorded at the fair value of the asset (70000) you are giving up plus any cash paid (60000).

70000 + 60000 = 130000 (Value of new machine)
D) The machine and $65,000 cash were traded for a piece of land to build a new manufacturing plant. The land has a fair value of $165,000. The fair value of the machine is unknown.

<table>
<thead>
<tr>
<th>Date</th>
<th>Account Titles and Explanations</th>
<th>REF</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 2</td>
<td>Land</td>
<td></td>
<td>165000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accumulated Depreciation - Machine</td>
<td></td>
<td>119250</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gain on Disposal</td>
<td></td>
<td></td>
<td>33750</td>
</tr>
<tr>
<td></td>
<td>Cash</td>
<td></td>
<td>65000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Machine</td>
<td></td>
<td></td>
<td>185500</td>
</tr>
</tbody>
</table>

If we cannot determine the fair value of the asset we are giving up, in this case, the fair value of the asset being received should be used for the value of the new asset.

Fair Value of the Asset Received – Assets Given Up = + Gain or – Loss

Assets You are Giving Up = Cash Paid + Carrying Amount