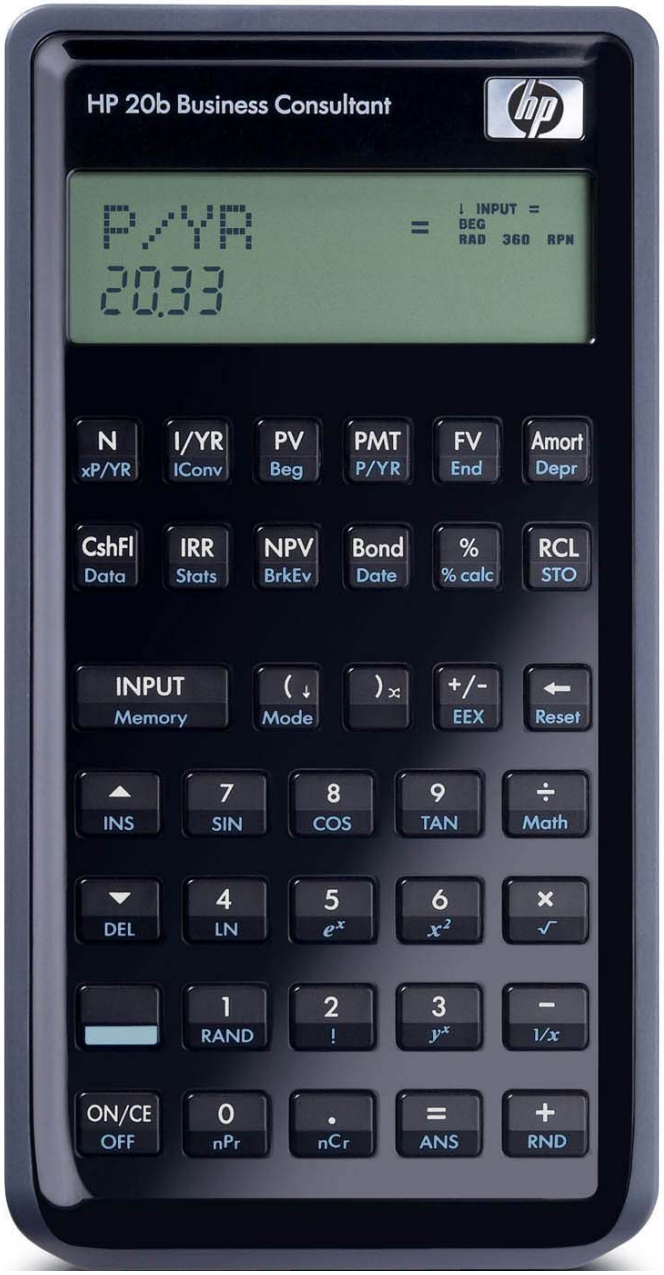
hp calculators

HP 20b Depreciation

Depreciation

Depreciation on the HP 20b

Practice solving depreciation problems



Depreciation

Depreciation is an accounting term that may be defined as the permanent and continuing decrease in the quality, quantity or the value of an asset over time. This is due to many reasons, from deterioration and obsolescence to impending retirement. It applies particularly to physical assets like equipment. In industry, for accounting purposes, depreciation is also a method of deducting the cost of business property related to capital assets as they wear out, lose value, or become obsolete in order to recover their cost as a business expense. A capital asset can be a piece of equipment, a building or a vehicle expected to be used for several years. The purchase price of the asset on the purchase date is called book value. Several common depreciation methods involve these calculations:

Straight line depreciation is calculated as: (Basis – Salvage Value) ÷ Life of Asset.

Declining balance is calculated as: Remaining book value x Factor% ÷ Life of Asset.

Sum of the years' digits is calculated as: (Basis – Salvage Value) x (Years remaining ÷ Sum of years of life)

As an example for the sum of the years' digits, if an asset has an estimated life of 5 years, the sum of the years of life would be 5 + 4 + 3 + 2 + 1, or 15. A shortcut formula to determine this sum is of the form N x (N + 1) ÷ 2. In this example, this shortcut would produce 5 x 6 ÷ 2, or 15. The value for years remaining would begin at 5 and be decreased by one each year until it held the value of 1 for the final year.

Depreciation on the HP 20b

The HP 20b can compute asset depreciation using the [▬] [Depr] menu. The available depreciation methods are indicated in the table below.

HP 20b Depreciation Methods

Depreciation Method	Description
Sline	Straight line is a method of calculating depreciation presuming an asset loses a certain percentage of its value annually at an amount evenly distributed throughout its useful life.
SOYD	Sum-of-the-years' digits is an accelerated depreciation method. In SOYD, the depreciation in year *Y* is (Life-Y+1)/SOY/100% of the asset, where *SOY* is the sum-of-the-years for the asset, or, for an asset with a 5-year life, 5+4+3+2+1=15.
DecBal	Declining balance is an accelerated depreciation method that presumes an asset will lose the majority of its value during the first few years of its useful life.
DBXover	Declining balance crossover is an accelerated depreciation method that presumes an asset will lose the majority of its value in the first few years of its useful life, but that it will revert to a consistent depreciation during the latter part of its life, which is then calculated using the straight line method.
French SL	Straight line French. This method of depreciation is similar to the Straight line method, except an actual calendar date in the current format is entered in for *Start* to indicate when the asset was first placed into service.
Amort F	French amortization. This method is an accelerated depreciation method with a crossover to the French Straight Line method.

HP 20b Depreciation

The next table below lays out the depreciation menu items found in the depreciation menu. To move from one item in the menu to the next, press the down arrow key [▼]. This key is abbreviated DWN in the map below. To change the displayed depreciation method to another one, press [INPUT], as shown in the menu map. Pressing [▼] will enter the depreciation menu items as shown below. Below this map is a table explaining each of the entries in the depr menu in more detail. To clear the depreciation menu while in the menu, press [▬] [Reset] [INPUT]. To exit the menu, press [ON/CE].

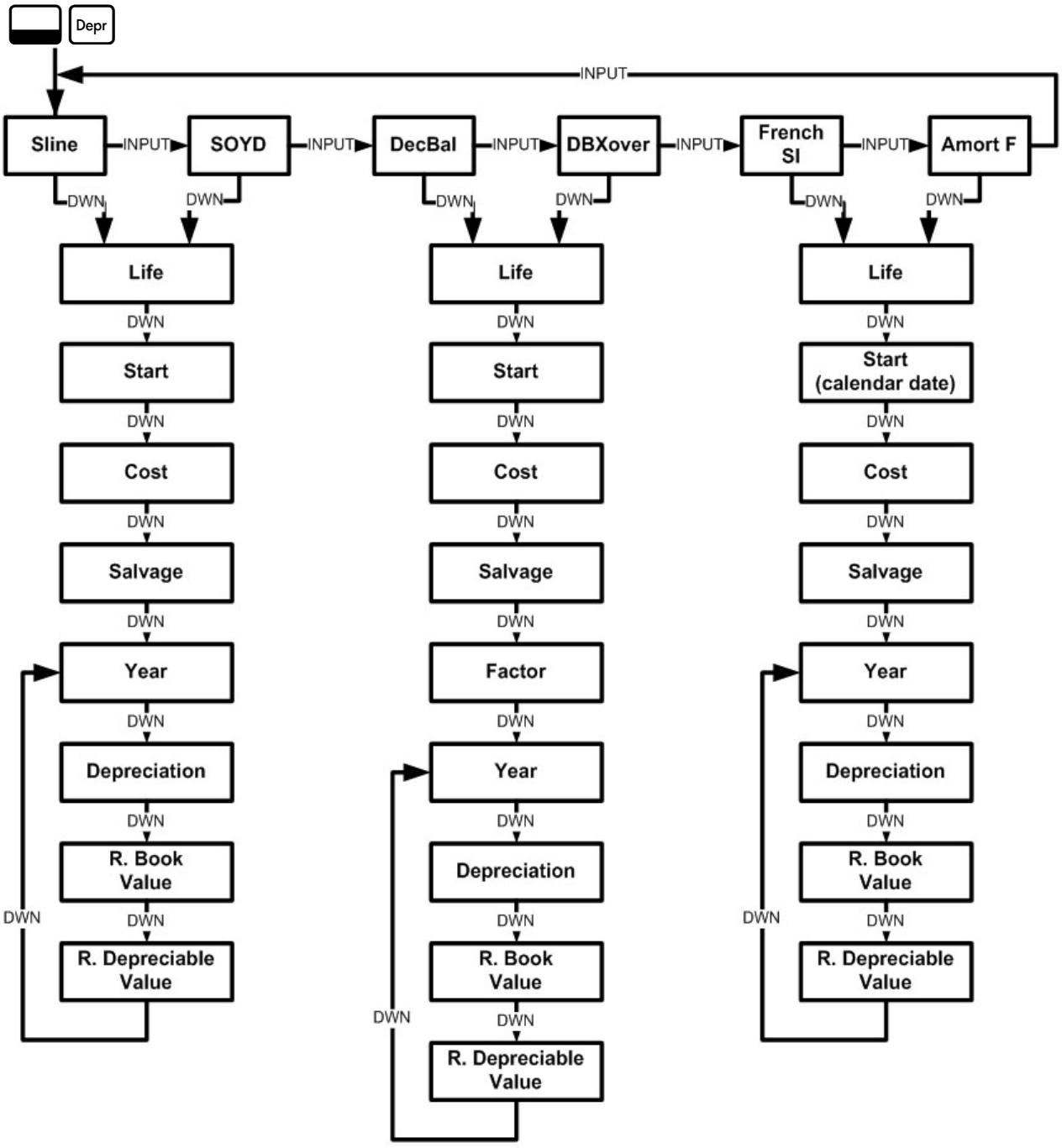


Table 8-2 Depreciation Menu Items

Item	Description
Life	The expected useful life of the asset in years. Input only.
Start	*Start* refers to the date or month in which the asset is first placed into service. Depending on the type of depreciation, this can be the month, or, in the case of French Straight-line and Amort F, the actual date in the current format. Input only.
Cost	The depreciable cost of the asset at acquisition. Input only.
Salvage	The salvage value of the asset at the end of its useful life. Input only. Can be zero.
Factor	The declining balance factor as a percentage. This is used for declining balance and declining balance crossover methods only. Input only.
Year	Year for which you want to calculate the depreciation. Incremented as you press ▼ to continue to scroll through the depreciation menu. Input only if you wish to change the period for the next loop through the menu items.
Depreciation	Depreciation in the given year. Output only.
R.Book Value	Remaining book value at the end of the given year. Output only.
R.Depreciable Value	Remaining depreciable value at the end of the given year. Output only.

Practice solving depreciation problems

Example 1: The R&D department of a crystal refinement company spent $28,000 for new equipment for the digital spectrometer lab. The expected life for this equipment is 12 years, and the salvage value is $2,500. What is the depreciation per year using the straight line method?

Solution:

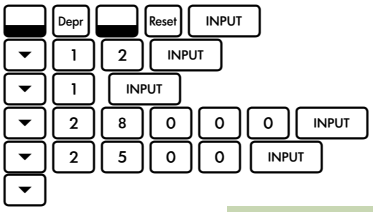
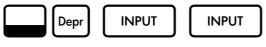


Figure 1

Answer: The annual amount of depreciation calculated with the SL method is $2,125.

Example 2: For the equipment from example 1, calculate the declining balance depreciation for the fifth and eighth years and compare the values to the straight-line fixed depreciation. Use the declining balance method with a 2× weight (200%) related to the SL. Assume that example 1 has just been worked. What is the remaining book balance for the fifth and eighth years?

Solution:



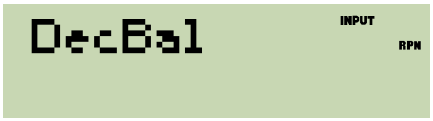


Figure 2

▼ ▼ ▼ ▼ ▼ ▼

Figure 3

5 INPUT

Figure 4

▼

Figure 5

▼

Figure 6

▼ ▼ 5 INPUT

Figure 7

▼

Figure 8

▼

Figure 9

Answer: The amount of depreciation using a 200% DB method for the 5th year is $2,250.52 with a remaining book value of $11,252.57 and depreciation of $1,302.38 for the 8th year, with a remaining book value of $6,511.91. With the same figures, the annual amount of depreciation calculated with the SL method is $2,125.

Example 3: For the equipment from example 1, calculate the sum of the years' digits depreciation amount for the fifth and eighth years and compare the values to the straight-line fixed depreciation. Assume that example 1 has just been worked.

Solution: [Depr] [INPUT] [INPUT] [INPUT] [INPUT] [INPUT]

Figure 10

[▼] [▼] [▼] [▼] [▼] [5] [INPUT] [▼]

Figure 11

[▼] [▼] [▼] [8] [INPUT] [▼]

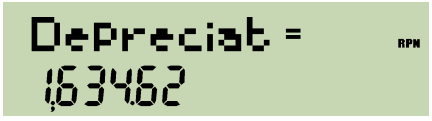


Figure 12

Answer: The amount of depreciation the sum of the years' digits for the 5th year is $2,615.38 and $1,634.62 for the 8th year. With the same figures, the annual amount of depreciation calculated with the SL method is $2,125.

Example 4: Professional video equipment bought for $15,000 has a useful life of 8 years with a salvage value of $1,100. Using the SOYD method, find the amount of depreciation for the fourth year.

Solution: [Depr] [Reset] [INPUT] [INPUT]

Figure 13

[▼] [8] [INPUT]
[▼] [▼] [1] [5] [0] [0] [0] [INPUT]
[▼] [1] [1] [0] [0] [INPUT]
[▼] [4] [INPUT]
[▼]

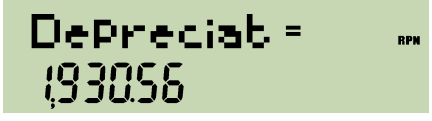


Figure 14

Answer: The depreciation for the fourth year is $1,930.56