E8–2.

Req. 1

Fixed asset turnover ratio: ($ in millions)
Net Sales ÷ [(beginning net fixed assets + ending net fixed assets) ÷ 2]

2015	**2016**	**2017**
$233,715 ÷ $21,556.50	$215,639 ÷ $24,740.50	$229,234 ÷ $30,396.50
10.84	8.72	7.54

Computation of denominator:

2015	($20,642 + $22,471) ÷ 2	= $21,556.50
2016	($22,471 + $27,010) ÷ 2	= $24,740.50
2017	($27,010 + $33,783) ÷ 2	= $30,396.50

Req. 2

Apple's fixed asset turnover ratio decreased each year from 2015 to 2017. The decrease was due primarily to a larger percentage increase in average net fixed assets over the three years than the percentage increase in net sales (that is, the denominator net fixed assets grew faster than the numerator net sales).

An analyst can use longitudinal analysis to observe possible trends over time. The results suggest that Apple's management became less efficient at utilizing its long-lived assets over time. By reading the 10-K, an analyst can learn more about why net fixed assets are increasing and any plans the company has for utilizing those assets. In addition, the analyst may compare Apple's ratios to those of competitors in the industry.

E8–5.

Req. 1

Date	Assets		Liabilities		Stockholders' Equity	
January 1	Cash	−12,800	Short term note payable	+36,000		
	Equipment	+48,800				
January 2	Cash	−700				
	Equipment	+700				
Sept. 30	Cash	−38,160	Short term note payable	−36,000	Interest expense*	−2,160

* $36,000 principal x .08 interest rate x 9/12 of a year = $2,160 interest

Req. 2

> Acquisition cost of the van:
> | | |
> |---|---|
> | Cash paid (including sales tax) | $12,800 |
> | Note payable with supplier | 36,000 |
> | Painting costs | 700 |
> | Acquisition cost | $49,500 |

Req. 3

Depreciation for year 1: ($49,500 cost - $4,500 residual value) x 1/5 $ 9,000

Req. 4

On September 30, $2,160 ($36,000 x 8% x 9/12) is paid and is recorded as interest expense. The amount is not capitalized (added to the cost of the asset) because interest is capitalized only on constructed assets. This van was purchased.

Req. 5

Equipment (cost)	$49,500
Less: Accumulated depreciation ($9,000 x 2 years)	18,000
Net book value at end of year 2	$31,500

E8–11.

Req. 1

C = Cost, RV = Residual Value, UL = Useful Life, AD = Accumulated Depreciation

☐a. **Straight-line:**

Year	(C − RV) x 1/UL Computation	Depreciation Expense	Accumulated Depreciation	Net Book Value
At acquisition				$45,000
1	($45,000 − $5,000) x 1/4	$10,000	$10,000	35,000
2	($45,000 − $5,000) x 1/4	10,000	20,000	25,000
3	($45,000 − $5,000) x 1/4	10,000	30,000	15,000
4	($45,000 − $5,000) x 1/4	10,000	40,000	5,000

☐b. **Units-of-production:** ($45,000 − $5,000) ÷ 400,000 = $0.10 per unit of output

Year	(C − RV)/UL x Actual Computation	Depreciation Expense	Accumulated Depreciation	Net Book Value
At acquisition				$45,000
1	$0.10 x 120,000 units	$12,000	$12,000	33,000
2	$0.10 x 90,000 units	9,000	21,000	24,000
3	$0.10 x 110,000 units	11,000	32,000	13,000
4	$0.10 x 80,000 units	8,000	40,000	5,000

c. **Double-declining-balance:**

Year	(C − AD) x 2/UL Computation	Depreciation Expense	Accumulated Depreciation	Net Book Value
At acquisition				$45,000
1	($45,000 − 0) x 2/4	$22,500	$22,500	22,500
2	($45,000 − $22,500) x 2/4	11,250	33,750	11,250
3	($45,000 − $33,750) x 2/4	5,625	39,375	5,625
4	($45,000 − $39,375) x 2/4	2,813*	42,188	2,812
		625	40,000	5,000

*Rounded

→

$2,812.50 is too large. Net book value should equal residual value at end of useful life.

Work backwards to change net book value to $5,000 residual value, then accumulated depreciation to $40,000 ($45,000 − $5,000), and depreciation expense to $625 ($40,000 − $39,375).

Req. 2

If the machine is used evenly throughout its life and its efficiency (economic value in use) is expected to decline steadily each period over its life, then straight-line depreciation would be preferable. If the machine is used at a

consistent rate but the efficiency is expected to decline faster in the earlier years of its useful life, then an accelerated method would be appropriate [such as, double-declining-balance]. If the machine is used at different rates over its useful life and its efficiency declines with output, then the units-of-production method would be preferable because it would result in a better matching of depreciation expense with revenue earned.

E8–18.

Req. 1
    Depreciation expense per year:
        $6,000 accumulated depreciation ÷ 3 years of usage = $2,000 per year

    Estimated useful life:
    ($25,000 – $9,000) x 1/? useful life = $2,000 per year
     $16,000 / $2,000 = <u>8 year estimated useful life</u>

Req. 2
  December 31:
    Depreciation expense (+E, –SE)   2,000
        Accumulated depreciation (+XA, –A)   2,000
    To bring accumulated depreciation up to the date of the accidental loss
    ($25,000 – $9,000) x 1/8 = $2,000.

    Accumulated depreciation ($6,000 + $2,000) (–XA, +A)   8,000
    Loss on disposal of truck (+E, –SE)   17,000
        Truck (–A)   25,000
    To record disposal of wrecked truck.

Req. 3
  There would be a $4,000 loss on the disposal of the truck equal to the difference between the loss assuming no insurance coverage ($17,000 above) and the insurance payment received ($13,000).

E8–19.

Req. 1
Computation of acquisition cost of the deposit in 2020:

February 2020:	Purchase of mineral deposit	$ 800,000
March 2020:	Preparation costs	70,000
	Total acquisition cost in 2020	$ 870,000

Req. 2
Computation of depletion for 2020:
$870,000 cost ÷ 1,000,000 cubic yards = $.87 per cubic yard depletion rate
60,000 cubic yards in 2020 x $.87 = $52,200

Req. 3
Computation of net book value of the deposit after the developmental work:

Total acquisition cost in 2020	$ 870,000
Less: 2020 depletion	(52,200)
January 2021 developmental costs	6,000
Net book value	$ 823,800

E8–20.

Req. 1

Amortization on December 31, 2019 (straight-line method with no residual value):

→   Technology: $70,000 x 1/4 = $17,500 amortization expense

Patent: $6,000 x 1/15* remaining = $400 amortization expense
              *Patents have a 20 year legal life and the patent was registered
               five years ago.

Trademark: The trademark is not amortized due to its indefinite life.

Req. 2

Income statement for 2019:
    Operating expenses:
          Amortization expense ($17,500 + $400) → $17,900

Balance sheet at December 31, 2019:
☐ (under noncurrent assets)
☐☐ Intangibles:
☐☐   Technology ($70,000 – $35,000*) ....→...... $35,000
☐☐   Patent ($6,000 – $400)........................→............ 5,600
☐☐   Trademark ....→........................ 13,000 ** $53,600

* $17,500 amortization expense x 2 years
** Although trademarks are valuable assets, they are rarely seen on balance sheets
     unless purchased.