MIT Sloan School of Management

15.516x: Financial Accounting

The attached financial statements are an excerpt from Nike's fiscal 2017 annual report (year ended May 31, 2017). Please use these financial statements to answer the Questions 1-32.

When asked to show or provide the journal entry, use the balance sheet equation format as we did in class. Show your work and any assumptions you made in answering the questions (where applicable).

Formulas

Gross Profit Margin	= (Revenue – COGS)/Revenue
ROE	= Net Income / Ending Equity
ROA	= Net Income / Ending Assets
Profit Margin	= Net Income / Sales
Asset Turnover	= Sales / Ending Assets
Leverage	= Ending Assets / Ending Equity

Revenue Recognition

1. What was Nike's total net revenue during the fiscal year ending on 5/31/2017?
2. What were the total gross and net accounts receivables for Nike on 5/31/2017?
3. Was *Nike's* bad debt expense higher, equal or lower than actual write off of accounts receivable during the fiscal year ending on 5/31/2017? Briefly explain your answer.

   Higher Equal Lower

Inventory

4. What was the total inventory for *Nike* on 5/31/2017?
5. What was *Nike's* Gross Profit Margin during the fiscal year ending on 5/31/2017? How do you interpret this number?
6. One of *Nike's* main competitors reported the following information for the 2017 fiscal year:

   Revenue under LIFO (in millions): $3,963
   COGS under LIFO (in millions): $2,259
   LIFO Reserve: $422 (in millions) in 2016, $518 (in millions) in 2017

   Was *Nike's* Gross Profit Margin higher, the same or lower than its competitor's during the fiscal year ending on 5/31/2017? Assume that Nike uses FIFO. Provide the calculations to support your answer.

   Higher Equal Lower

Fixed Assets – Decision Making

7. What were the total gross and net Property, Plant and Equipment (PPE) for *Nike* on 5/31/2017? How do you interpret these amounts?

In answering questions 8-12, assume that the transactions described below are *in addition to* those in the financial statements you have. For example, *Nike* shows $3,808 million in cash and equivalents on 5/31/2017. Any cash generated/used by the following transactions are *in addition to* this $3,808 million.

Suppose *Nike* was considering one of the two alternatives to finance a set of machines for its *Flyknit* shoe lines. Also assume the decision is made on the very first day of the following fiscal year (that is, on 6/1/2017).

A) Issue a par bond with a face value of $50 million and a coupon rate of 2%. The face value is due at the end of year 5. Invest the proceeds from the bond to purchase the machines (recorded as Property, Plant and Equipment). The machines have a useful life of five years and zero salvage value.

B) Sign a rental agreement of five payments of $11 million per year. The rental agreement will be treated as an operating lease *under the old standard* for accounting purposes.

8. Use the Balance Sheet Equation (BSE) to identify the transactions *Nike* would record to reflect the issuance of the bond and the acquisition of the PPE (option A) at the decision date. That is, at the beginning of the 2018 fiscal year on 6/1/2017.

9. Use the Balance Sheet Equation (BSE) to identify the transactions *Nike* would record to reflect the issuance of the bond and the acquisition of the PPE (option A) at the end of the next fiscal year on 5/31/2018.

10. Use the Balance Sheet Equation (BSE) to identify the transactions *Nike* would record to reflect the rental agreement (option B) at the decision date. That is, at the beginning of the 2018 fiscal year on 6/1/2017.

11. Use the Balance Sheet Equation (BSE) to identify the transactions *Nike* would record to reflect the rental agreement (option B) at the end of the next fiscal year on 5/31/2018.

12. Suppose that the bonus plan for *Nike*'s employees is partially tied to a performance metric such as return on assets (ROA). How would the two options above affect the return on assets (ROA), and ultimately the bonus plan, during the 2018 fiscal year? In 1-2 sentences explain your answer. *Ignore taxes.*

Intangible Assets – Decision Making

13. What was the total net identifiable intangible assets for *Nike* on 5/31/2017? What do these intangibles consist of?

14. What was the total goodwill for *Nike* on 5/31/2017?

15. Did *Nike* impair its goodwill during the fiscal year ending on 5/31/2017? If so, by how much?

In answering questions 16-20, assume that the transactions described below are *in addition to* those in the financial statements you have. For example, *Nike* shows $3,808 million in cash and equivalents on 5/31/2017. Any cash generated/used by the following transactions are *in addition to* this $3,808 million.

Suppose *Nike* was considering one of the two alternatives to invest in a new technology of its *Dry Fit* shirts. Also assume the decision is made on the very first day of the following fiscal year (that is, on 6/1/2017).

A) Spend $10 million per year over the next three years. This decision would be treated as Research and Development for accounting purposes.

B) Acquire a startup that has developed a recent *Dry Fit* technology for $40 million. The acquisition cost consists of a patent worth of $32 million and $8 million of acquisition synergies. The patent has a useful life of four years.

16. Use the Balance Sheet Equation (BSE) to identify the transactions *Nike* would record to reflect the R&D investment (option A) at the decision date. That is, at the beginning of the 2018 fiscal year on 6/1/2017.

17. Use the Balance Sheet Equation (BSE) to identify the transactions *Nike* would record to reflect the R&D investment (option A) at the end of the next fiscal year on 5/31/2018.

18. Use the Balance Sheet Equation (BSE) to identify the transactions *Nike* would record to reflect the acquisition (option B) at the decision date. That is, at the beginning of the 2018 fiscal year on 6/1/2017.

19. Use the Balance Sheet Equation (BSE) to identify the transactions *Nike* would record to reflect the acquisition (option B) at the end of the next fiscal year on 5/31/2018. Assume that the value of the goodwill was impaired by $1 million during the 2018 fiscal year.

20. Which of the two options would result in a higher net income during the 2018 fiscal year? In 1-2 sentences explain your answer. *Ignore taxes.*

DuPont Decomposition

21. Use the DuPont decomposition learned in class to decompose *Nike*'s return on equity (ROE) into (i) Profit Margin, (ii) Asset Turnover and (iii) Leverage. For this question use the numbers as reported in the financial statements without any adjustments.

22. One of *Nike's* main competitors reported the following information for the 2017 fiscal year:

ROE:	15.35%
ROA:	9.36%
Profit Margin:	5.85%
Asset Turnover:	1.60
Leverage:	1.64

How do you compare *Nike* to its competitors? Use different metrics to substantiate your answer.

Miscellaneous

23. Provide an example of *Nike's* accrued liabilities during the fiscal year ending on 5/31/2017? Use the Balance Sheet Equation (BSE) to record this transaction.

24. How much cash did *Nike* return to its investors in the form of dividends and share repurchases during the fiscal year ending on 5/31/2017?

25. Did *Nike* buy/sell marketable securities in the form of short-term investments using cash during the fiscal year ending on 5/31/2017? If so, by how much?

26. What was *Nike's* total advertising and promotion expenses during the fiscal year ending on 5/31/2017

27. What were *Nike's* cash flow from operations (CFO), cash flow from investment (CFI) and cash flow from financing (CFF) during the fiscal year ending on 5/31/2017? Based on these numbers which stage of life cycle is *Nike* in?

Taxes

28. Use the Balance Sheet Equation (BSE) to identify the transactions Nike would record to reflect the provision for income taxes for the fiscal year ending on 5/31/2017? Assume that all the difference between income tax expense and deferred tax liability is paid in cash as income tax (e.g., Ignore disclosure about cash paid for income taxes in statements of cash flows).

29. For the fiscal year ending on 5/31/2017, Nike recorded a change in its valuation allowance for deferred tax assets. Use the Balance Sheet Equation (BSE) to identify the transactions Nike would record to reflect this transaction, and clearly label the accounts affected.

30. As of 5/31/2017, how much did Nike reduce its income taxes payable over the life of its operations due to a timing difference in book income and taxable income associated with property, plant, and equipment (e.g., depreciation)?

31. Determine the increase or decrease in Nike's deferred compensation that is implied by the change in the deferred tax asset associated with deferred compensation ending on 5/31/2017. Please assume that Nike has a 30% tax rate for this question.

32. Recently, the US changed its corporate tax rate to 21% from 35%. At a conceptual level, would this tax rate change affect a US domestic company's (i) deferred tax asset (DTA) and (ii) deferred tax liability (DTL)?

    If the tax rate change affects the DTA and/or DTL, specific by how much would the DTA/DTL increase or decrease.

FOR THE REMAINDER OF THESE PROBLEMS, DO NOT USE THE NUMBERS IN NIKE'S FINANCIAL STATEMENTS.

RATHER, USE ONLY THE NUMBERS PROVIDED IN THE QUESTIONS BELOW

FOR THE FOLLOWING QUESTIONs, ASSUME A 0% TAX RATE.

Recall that there is a new standard for leases as of 2019. Suppose that Zoltan Corp executes a new lease on January 1, 2020, and accounts for it using the new standard. The three payments on the lease are $100 thousand per year, and are due each December 31. The terms of the lease are summarized below:

Annual lease payment:	**$100,000**
Term of lease:	**3 years**
Interest rate:	**5.00%**
Lease commences on:	**January 1, 2020**
Payments due:	**December 31 of each year in the lease term**

33. What transaction does Zoltan record when they initiate the lease on January 1, 2020 if the lease is treated as an operating lease ***under the new standard***?

34. How does your anser to 33 above change if this were an finance lease ***under the new standard***?

35. If this were an operating lease ***under the new standard***, what transactions would Zoltan record on December 31, 2020? *Ignore taxes.*

36. If this were a finance lease ***under the new standard***, what transactions would Zoltan record on December 31, 2020? *Ignore taxes.*

37. Assume that instead of the lease on January 1, 2020, Zoltan issues a three-year zero coupon bond. The market rate of interest for Zoltan is 5%, the face value of the bond is $315,250. Assume that they use all of the proceeds to purchase the equipment (so that no lease is needed). That is, assume the equipment costs Zoltan exactly the amount of cash raised from the zero coupon bond. What transactions would they record on January 1, 2020 for the bond issuance and asset purchase? *Please remember that the asset has a 3-year useful life and zero salvage value.*

38. What transaction would they record on December 31, 2020 for the zero coupon bond and asset purchase from the question above? *Please round to the nearest thousand; Ignore taxes*.

39. Zoltan is concerned about their cash position. Please calculate the effect of each of these alternatives on net cash outflows for the for the year December 31, 2020. *Ignore taxes.*

40. Zoltan is concerned about their debt covenants, which restrict their ability to take on any additional liabilities. Please calculate the incremental effect of each of these alternatives on total liabilities on December 31, 2020. *Ignore taxes*.

41. Zoltan is concerned about their net income. Please calculate the effect of each of these alternatives on net income for the year December 31, 2020. *Ignore taxes*.

42. Over the life of the asset, which of the three options (operating lease, capital lease, purchasing the asset and funding it with a zero coupon bond) will cause net income to be the lowest?

TABLE 1 Present Value of Single Amount

	Interest Rate									
Period	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10
1	0.99010	0.98039	0.97087	0.96154	0.95238	0.94340	0.93458	0.92593	0.91743	0.90909
2	0.98030	0.96117	0.94260	0.92456	0.90703	0.89000	0.87344	0.85734	0.84168	0.82645
3	0.97059	0.94232	0.91514	0.88900	0.86384	0.83962	0.81630	0.79383	0.77218	0.75131
4	0.96098	0.92385	0.88849	0.85480	0.82270	0.79209	0.76290	0.73503	0.70843	0.68301
5	0.95147	0.90573	0.86261	0.82193	0.78353	0.74726	0.71299	0.68058	0.64993	0.62092
6	0.94205	0.88797	0.83748	0.79031	0.74622	0.70496	0.66634	0.63017	0.59627	0.56447
7	0.93272	0.87056	0.81309	0.75992	0.71068	0.66506	0.62275	0.58349	0.54703	0.51316
8	0.92348	0.85349	0.78941	0.73069	0.67684	0.62741	0.58201	0.54027	0.50187	0.46651
9	0.91434	0.83676	0.76642	0.70259	0.64461	0.59190	0.54393	0.50025	0.46043	0.42410
10	0.90529	0.82035	0.74409	0.67556	0.61391	0.55839	0.50835	0.46319	0.42241	0.38554
11	0.89632	0.80426	0.72242	0.64958	0.58468	0.52679	0.47509	0.42888	0.38753	0.35049
12	0.88745	0.78849	0.70138	0.62460	0.55684	0.49697	0.44401	0.39711	0.35553	0.31863
13	0.87866	0.77303	0.68095	0.60057	0.53032	0.46884	0.41496	0.36770	0.32618	0.28966
14	0.86996	0.75788	0.66112	0.57748	0.50507	0.44230	0.38782	0.34046	0.29925	0.26333
15	0.86135	0.74301	0.64186	0.55526	0.48102	0.41727	0.36245	0.31524	0.27454	0.23939
16	0.85282	0.72845	0.62317	0.53391	0.45811	0.39365	0.33873	0.29189	0.25187	0.21763
17	0.84438	0.71416	0.60502	0.51337	0.43630	0.37136	0.31657	0.27027	0.23107	0.19784
18	0.83602	0.70016	0.58739	0.49363	0.41552	0.35034	0.29586	0.25025	0.21199	0.17986
19	0.82774	0.68643	0.57029	0.47464	0.39573	0.33051	0.27651	0.23171	0.19449	0.16351
20	0.81954	0.67297	0.55368	0.45639	0.37689	0.31180	0.25842	0.21455	0.17843	0.14864
21	0.81143	0.65978	0.53755	0.43883	0.35894	0.29416	0.24151	0.19866	0.16370	0.13513
22	0.80340	0.64684	0.52189	0.42196	0.34185	0.27751	0.22571	0.18394	0.15018	0.12285
23	0.79544	0.63416	0.50669	0.40573	0.32557	0.26180	0.21095	0.17032	0.13778	0.11168
24	0.78757	0.62172	0.49193	0.39012	0.31007	0.24698	0.19715	0.15770	0.12640	0.10153
25	0.77977	0.60953	0.47761	0.37512	0.29530	0.23300	0.18425	0.14602	0.11597	0.09230
30	0.74192	0.55207	0.41199	0.30832	0.23138	0.17411	0.13137	0.09938	0.07537	0.05731
35	0.70591	0.50003	0.35538	0.25342	0.18129	0.13011	0.09366	0.06763	0.04899	0.03558
40	0.67165	0.45289	0.30656	0.20829	0.14205	0.09722	0.06678	0.04603	0.03184	0.02209

TABLE 2 Present Value of Ordinary Annuity $p = \{1 -$

	Interest Rate										
Period	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	
1	0.99010	0.98039	0.97087	0.96154	0.95238	0.94340	0.93458	0.92593	0.91743	0.90909	0.
2	1.97040	1.94156	1.91347	1.88609	1.85941	1.83339	1.80802	1.78326	1.75911	1.73554	1.
3	2.94099	2.88388	2.82861	2.77509	2.72325	2.67301	2.62432	2.57710	2.53129	2.48685	2.
4	3.90197	3.80773	3.71710	3.62990	3.54595	3.46511	3.38721	3.31213	3.23972	3.16987	3.
5	4.85343	4.71346	4.57971	4.45182	4.32948	4.21236	4.10020	3.99271	3.88965	3.79079	3.
6	5.79548	5.60143	5.41719	5.24214	5.07569	4.91732	4.76654	4.62288	4.48592	4.35526	4.
7	6.72819	6.47199	6.23028	6.00205	5.78637	5.58238	5.38929	5.20637	5.03295	4.86842	4.
8	7.65168	7.32548	7.01969	6.73274	6.46321	6.20979	5.97130	5.74664	5.53482	5.33493	5.
9	8.56602	8.16224	7.78611	7.43533	7.10782	6.80169	6.51523	6.24689	5.99525	5.75902	5.
10	9.47130	8.98259	8.53020	8.11090	7.72173	7.36009	7.02358	6.71008	6.41766	6.14457	5.
11	10.36763	9.78685	9.25262	8.76048	8.30641	7.88687	7.49867	7.13896	6.80519	6.49506	6.
12	11.25508	10.57534	9.95400	9.38507	8.86325	8.38384	7.94269	7.53608	7.16073	6.81369	6.
13	12.13374	11.34837	10.63496	9.98565	9.39357	8.85268	8.35765	7.90378	7.48690	7.10336	6.
14	13.00370	12.10625	11.29607	10.56312	9.89864	9.29498	8.74547	8.24424	7.78615	7.36669	6.
15	13.86505	12.84926	11.93794	11.11839	10.37966	9.71225	9.10791	8.55948	8.06069	7.60608	7.
16	14.71787	13.57771	12.56110	11.65230	10.83777	10.10590	9.44665	8.85137	8.31256	7.82371	7.
17	15.56225	14.29187	13.16612	12.16567	11.27407	10.47726	9.76322	9.12164	8.54363	8.02155	7.
18	16.39827	14.99203	13.75351	12.65930	11.68959	10.82760	10.05909	9.37189	8.75563	8.20141	7.
19	17.22601	15.67846	14.32380	13.13394	12.08532	11.15812	10.33560	9.60360	8.95011	8.36492	7.
20	18.04555	16.35143	14.87747	13.59033	12.46221	11.46992	10.59401	9.81815	9.12855	8.51356	7.
21	18.85698	17.01121	15.41502	14.02916	12.82115	11.76408	10.83553	10.01680	9.29224	8.64869	8.
22	19.66038	17.65805	15.93692	14.45112	13.16300	12.04158	11.06124	10.20074	9.44243	8.77154	8.
23	20.45582	18.29220	16.44361	14.85684	13.48857	12.30338	11.27219	10.37106	9.58021	8.88322	8.
24	21.24339	18.91393	16.93554	15.24696	13.79864	12.55036	11.46933	10.52876	9.70661	8.98474	8.
25	22.02316	19.52346	17.41315	15.62208	14.09394	12.78336	11.65358	10.67478	9.82258	9.07704	8.
30	25.80771	22.39646	19.60044	17.29203	15.37245	13.76483	12.40904	11.25778	10.27365	9.42691	8.
35	29.40858	24.99862	21.48722	18.66461	16.37419	14.49825	12.94767	11.65457	10.56682	9.64416	8.
40	32.83469	27.35548	23.11477	19.79277	17.15909	15.04630	13.33171	11.92461	10.75736	9.77905	8.