BLM Answers

BLM 8–1 Prerequisite Skills

1. a) 9.88 **b)** 1.3225 **c)** 6300
d) 23 100 **e)** 354 **f)** 1890
2. a) 0.04 **b)** 0.05 **c)** 0.005
d) 0.04 **e)** 0.08 **f)** 0.025
3. a) 0.12 **b)** 0.165 **c)** 0.0115
d) 0.084 **e)** 0.003 **f)** 0.05
4. a) 0.02 **b)** 0.05 **c)** 0.01
d) 0.03 **e)** 0.0225 **f)** 0.015
5. a) 8 **b)** 180 **c)** 304
d) 15.75 **e)** 347.20 **f)** 3892
6. a) 1.630 473 61 **b)** 1.056 395 833
c) 729 **d)** $\frac{1}{16}$ or 0.0625
e) 0.437 109 216 2 **f)** 0.951 810 843 2
7. a) \$573.75 **b)** \$396.80 **c)** \$69.20 **d)** \$2772.22
8. a) \$4200 **b)** \$48 533.33 **c)** \$1333.13 **d)** \$56 100

BLM 8–3 Section 8.1 Simple and Compound Interest

1.

Year	Amount ($)
0	6000.00
1	6330.00
2	6678.15
3	7045.45
4	7432.95
5	7841.76
6	8273.06
7	8728.07

Graphs may vary.

2.

Year	Marc's Investment ($)	Mike's Investment ($)
0	2000	2000.00
1	2060	2060.00
2	2120	2121.80
3	2180	2185.45
4	2240	2251.02
5	2300	2318.55
6	2360	2388.10
7	2420	2459.75

3. a) Compound interest: \$219.58 more
b) Compound interest: \$1019.38 more
c) Compound interest: \$209.74 more
d) Compound interest: \$75 680.45 more

4.

Year	Amount ($)
0	4500.00
1	4668.75
2	4843.83
3	5025.47
4	5213.93
5	5409.45
6	5612.30
7	5822.76
8	6041.12

Graphs may vary.

5. \$992.77 extra
6. a) i) Plan A **ii)** Plan B
b) i) \$48.60 more in Plan 1
ii) \$94.01 more in Plan 2

7. a)

Year	Amount ($)
0	6000.00
1	6288.00
2	6589.82
3	6906.14
4	7237.63
5	7585.04
6	7949.12
7	8330.68
8	8730.55

Graphs may vary.

b) Compound interest grows faster than simple interest, as interest in the next compounding period is also paid on the interest earned in the previous compounding period.
8. a) \$850 **b)** about 25 years
c) The new graph would not increase as quickly as the graph for 2.5%. Its curve would be below the curve for 2.5% growth.

BLM 8–4 Section 8.2 Compound Interest

1. a) \$535.29 **b)** \$3336.48
c) \$2191.22 **d)** \$34 583.21
2. \$18 495.49
3. a) \$9741.89 **b)** \$741.89
4. a) \$6258.25 **b)** \$6295.42
c) \$6314.81 **d)** \$6328.06 **e)** \$6333.23
5. As the compounding period increases, the amount of interest that is paid increases.
6. a) \$18 151.08 **b)** \$25 879.10
7. a) \$146.41 **b)** \$204.90

8. More interest is paid in the 10th year, because interest is paid on the principal and on 9 years of interest. In the 5th year, interest is paid on the principal and only 4 years of interest.
9. **a)** Plan B **b)** $1245.52
10. **a)** $26 541.95 **b)** $29 297.35 **c)** $35 059.57 **d)** $10 059.57

BLM 8–7 Section 8.3 Present Value

1. **a)** 1333.75 **b)** 640.15 **c)** 1372.69 **d)** 684.21
2. **a)** $5405.51 **b)** $451.50 **c)** $1643.94 **d)** $3378.19
3. $8725
4. $12 760.96
5. $4736.46
6. $9443.30
7. **a)** $28 155.23 **b)** $6844.77
8. **a)** $7701.74 **b)** $3401.74
9. Plan A is the better deal. With Plan B, the difference between the down payment and the full price is $2250. If she invested this money at 4% per year, compounded semi-annually, for one year, this is the equivalent of $2340.90 in a year. At the end of the year, Plan B requires her to pay $2450, which is more than $2340.90.
10. $3259.55
11. **a)** 5 years **b)** 3 years

BLM 8–8 Section 8.4 The TVM Solver

1. $5951.66
2. $3422.50
3. 18 years
4. $7182.87
5. 17 years
6. 4.93% per year
7. **a)** $7317.38 **b)** $6972.96 **c)** $6659.97
8. The $7500 investment will reach $10 000 half a year earlier than the $6000 investment.
9. No. $25 000 for 49 years in the investment would grow to just under a half million ($498 068.65), not one million.
10. 8% per year, compounded semi-annually

BLM 8–9 Section 8.5 Effects of Changing the Conditions on Investments and Loans

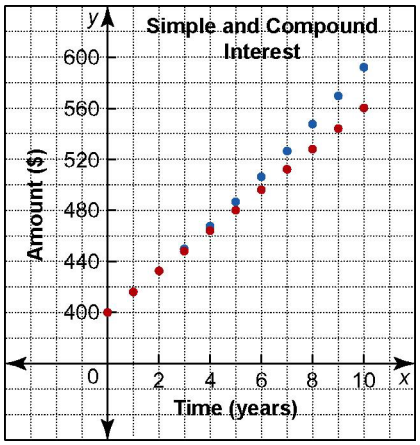
1. **a)** Graphs may vary.
   b) i) $7491.92 **ii)** $8103.27 **iii)** $8764.49
   c) I would tell Enrica to wait as long as possible to cash in her investment. The longer a compound interest investment is left in a plan, the more interest it will accumulate.
2. **a)** $5939.76 **b)** $6171.88 **c)** $6293.72
3. The graph of $y = 400(1.07)^n$ has a greater rate of growth, meaning that its graph would curve upwards faster.
4. **a)** $2158.92 **b)** $2191.12 **c)** $2219.64 **d)** $2224.17 **e)** $2225.35
5. **a)** $18 872.00 **b)** $19 386.97 **c)** $18 886.25
6.

Year	Amount ($)	Interest Earned ($)
0	3000.00	
1	3180.00	180.00
2	3370.80	190.80
3	3573.05	202.25
4	3787.43	214.38
5	4014.68	227.35

7. 6.7%
8. 5.17%
9. Christina; $621.80 more
10. **a)** 5.41% **b)** 5.34% **c)** 5.31% **d)** 5.29% **e)** 5.27%
11.

Annual Interest Rate (%)	Compounding Period	Scholarship Amount ($)
8	semi-annually	4080.00
7.5	quarterly	3856.79
5.5	semi-annually	2787.81
7	semi-annually	3561.25
9	annually	4500.00

BLM 8–11 Chapter 8 Review

1. 

2. $93.04

3. a)

Year	Population
0	14 000
1	14 392
2	14 795
3	15 209
4	15 635
5	16 073
6	16 523
7	16 986
8	17 461

Graphs may vary.

b) The rate of growth would be less, flattening out the graph.

4. a) $1067.67 **b)** $1845.41 **c)** $5731.88
5. $17 155.97
6. $3415.46
7. $1417.54
8. 8.75 years
9. 7.45%
10. $201 340.72
11. a) $4002.55 **b)** $4097.72
12. Plan B
13. a) $3116.82 **b)** $2976.38

BLM 8–12 Chapter 8 Practice Test

1. F
2. F
3. T
4. T
5. B
6. C
7. D
8. $13 841.89
9. $6700

10.a),b)

Year	Amount with Simple Interest ($)	Amount with Compound Interest ($)
0	800	800
1	880	880
2	960	968
3	1040	1064.8
4	1120	1171.28
5	1200	1288.41
6	1280	1417.25
7	1360	1558.97

Graphs may vary.

11. $2678.16
12. 12.29 years
13. 7.68 years
14. 4.47% per year

BLM 8–13 Chapter 8 Test

1. B
2. A
3. A
4. B
5. F
6. F
7. F
8. a) Plan B
b) i) Plan A earns $536.90 interest in 2 years
ii) Plan B earns $1836.57 interest in 6 years
9. 4.9% per year
10. a) $882.97 **b)** $1941.50
c) $11 005.33 **d)** $15 636.16
11. a) $1109.47 **b)** $539.14
c) $1997.17 **d)** $5103.25
12. $3720.57
13. a) $7.67 **b)** $7.98
14. a) $3407.04 **b)** $3409.66
c) $3411.00 **d)** $3411.90 **e)** $3412.34

15.

Year	Amount ($)
0	5000.00
1	5244.35
2	5500.65
3	5769.47
4	6051.43
5	6347.17
6	6657.36
7	6982.72
8	7323.97
9	7681.90
10	8057.32

Graphs may vary.