MTH 154 Homework #3 Key

1. $180 - 100 = $80 (See Excel)

2. $31.50, 58% See Excel

3. the successive increases also increase previous increases, likewise for decreases. its just like earning interest on the interest

4. answers will vary here. use a search engine to find some examples.

5. $2520 (See Excel)

6. $171.03 (See Excel)

7. daily compounding $348.55
   Continuous Compounding $\Rightarrow 300e^{.015(10)} = 348.55$
   they are basically the same for this size investment.

8. quarterly payments $4,185.59 monthly $\Rightarrow$ 1,395.20
   weekly payments $235.99 monthly $\Rightarrow$ 1,026.54 (See excel)
   (3 months per quarter, 4.35 weeks per month)
   Bank A pays a total of $101,135 interest over life of loan
   Bank B loan pays a total of $218,137 interest over life of loan.
   preferences will vary, but if I could afford it, I'd prefer the Bank A arrangement.

9. See Excel - Continuous compounding produces $72,225.10
   At end of Year 10.
   annual compounding will be a bit lower, but in same ballpark

10. $313.28 (See Excel)

11. a. 2.02%
    b. 5.13% (See Excel)
    c. 9.41%

12 a. $28.47 (see Excel)

b. $2508.47 (see Excel)

13. a. not exponential, ratio not the same

b. exponential $r = 2.5$

c. not exponential, ratio not the same

d. not exponential, ratio not the same

e. exponential, $r = 2$

(See Excel)