MAT 100 Homework #13 Key

1. $(1.20)(1.50) = 1.8$ ⇒ 80% markup altogether

2. $75(1-.30)(1-.40) = 75(.7)(.6) = 31.5$

$75 - 31.5 = 43.5$

$\frac{43.5}{75} = 58\%$ discount

3. because successive increases & decreases have a different base value

4. answers will vary

5. $2000(1+.13*2) = 2000(1.26) = \$2520$

6. [redacted]

N = 48
I = 4.5
PV = 7500
PMT = (171.03)
FV = 0
P/Y = C/Y = 12

7. $300\left(1+\frac{.015}{365}\right)^{3650}$ or

N = 3650
I = 1.5
PV = 300
PMT = 0
FV = (348.55)
P/Y = C/Y = 365

Continuous

$300e^{(.015)10} = 348.55$

the same to nearest penny

8. N = 60
I = 7.5
PV = 150,000
PMT = (4185.59)
FV = 0
P/Y = C/Y = 4
payback 251,135
1395.20 per month

vs

N = 1560
I = 7.25
PV = 150000
PMT = (235.99)
FV = 0
P/Y = C/Y = 52
payback 368,144
~ 943.96 per month
if I could afford it, I'd go w/ 15 year plan

9. [redacted]

N = 10
I = 10
PV = 0
PMT = 4000
FV = 63,744.70
P/Y = C/Y = 1

10. N = 60
I = 2.5
PV = 0
PMT = 313.28
FV = 20,000
P/Y = C/Y = 12

11. a. $(1 + \frac{.02}{12})^{12} = 1.02018 \Rightarrow 2.018\%$
$- 1$

b. $(1 + \frac{.05}{365})^{365} = 1.05127 \Rightarrow 5.127\%$
$- 1$

c. $(1 + \frac{.09}{52})^{52} = 1.09404 \Rightarrow 9.404\%$
$- 1$

12. a. $2547.93 (1 + .\frac{1352}{12}) = 2576.64$
$- 2547.93$
$\$ 28.71$

b. 2784.22
+145.78
-450.00
+ 28.71
2508.71