MTH 110
Quiz 4
Summer 2008

Show all work in a neat and organized fashion. Clearly indicate your answers.
50 points possible.

The following formulas may or may not be useful.

$$\text{Percent increase} = \frac{\text{amount of increase}}{\text{original amount}} \quad (\times 100\% \text{ to express as a percent})$$

$$\text{Percent decrease} = \frac{\text{amount of decrease}}{\text{original amount}} \quad (\times 100\% \text{ to express as a percent})$$

$$A = P(1+r)^t$$

$$A = P\left(1+\frac{r}{n}\right)^{nt}$$

$$P = \frac{A}{\left(1+\frac{r}{n}\right)^{nt}}$$

$$Y = \left(1+\frac{r}{n}\right)^{n} - 1$$

$$PMT = P\frac{\frac{r}{n}}{1-\left(1+\frac{r}{n}\right)^{-nt}} = P\frac{i}{1-(1+i)^{-m}}, \qquad i = \frac{r}{n}, \qquad m = nt$$

1. (3 pts.) 29.4 is 30% of what?

2. (3 pts.) The number of physical therapist assistants in 2004 was 59 thousand. In 2014, that number is expected to be 85 thousand. Find the percent increase.

3. (4 pts.) The principal represents an amount of money deposited in a savings account subject to compound interest at the given rate.

Principal	Rate	Compounded	Time
$15,000	9%	monthly	3.5 years

(a) Find how much money there will be in the account after the given number of years.

(b) Find the interest earned.

4. (5 pts.) Determine the effective annual yield (to the nearest hundredth of a percent, i.e., two decimal places) for each investment. Then select the better investment.

(a) 12.1% compounded semiannually

(b) 12% compounded monthly

5. (5 pts.) How much money should be deposited today in an account that earns 5% compounded quarterly so that it will accumulate to $950,000 in 35 years?

6. (5 pts.) At the time of her grandchild's birth, a grandparent deposits $6000 in an account that pays 4% compounded monthly. What will be the value of the account at the child's 50th birthday, assuming that no other deposits or withdrawals are made during this period?

7. (5 pts.) A loan of $64,000 is to be amortized with 12 equal quarterly payments. If the interest rate is 6%, compounded quarterly, what is the quarterly payment?

8. (10 pts.) A mortgage of $360,000, with interest at 7.5% compounded monthly, is to be repaid by making equal monthly payments for 30 years. Fill in the first two rows of the amortization schedule, for the first two monthly payments.

Period	Payment	Interest	Balance Reduction	Unpaid Balance
				360,000.00
1				
2				

9. (10 pts.) A loan of $20,000, with interest at 6% compounded semiannually, is to be repaid by making equal semiannual payments for 2 years. Fill in the amortization schedule.

Let me check your payment before you continue!

Period	Payment	Interest	Balance Reduction	Unpaid Balance
				20,000.00
1				
2				
3				
4				