

**MTH 110**  
**Quiz 4**  
**Summer 2009**

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

The following formula may or may not be useful.

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

1. (5 pts.) A loan of \$75,000 is to be amortized with 15 equal quarterly payments. If the interest rate is 12%, compounded quarterly, what is the quarterly payment?

2. (10 pts.) A loan of \$40,000, with interest at 8% 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
				40,000.00
1				
2				
3				
4				

3. (5 pts.) Four candidates, J, K, L, and M, are running for group leader. The votes are summarized in the following preference table.

Number of Votes	90	66	54	30	6
1st choice	J	L	M	K	L
2nd choice	K	K	L	M	M
3rd choice	L	M	K	L	K
4th choice	M	J	J	J	J

Who is declared the winner using the pairwise comparison method?

4. (5 pts.) The preference table for an election is shown.

Number of Votes	150	120	75	30
1st choice	X	W	W	Y
2nd choice	Y	Y	Z	Z
3rd choice	Z	Z	X	X
4th choice	W	X	Y	W

Suppose the Borda count method is used. Who is the winner?