

MA 111 Worksheet on Interest

1. Problems to try from Chapter 10 of the text (answers are in the back): 31, 33, 35, 37, 41, 43, 45, 47, 49, 81.
2. Payday loans allow you to borrow money from a future paycheck. To do this, you write a check with a future date on it, and a payday loan operation agrees to cash the check at that future date, while giving you cash money right now. They do not do this for free.

At one well-known payday loan operation in Kentucky, they charge a \$17.65 fee for every \$100 you borrow. So, for example, you would write the check for \$117.65, and they give you \$100 now.

This loan has a duration that depends on how long it is until your next paycheck. Depending on your employer, you may receive your paychecks weekly, every two weeks (a.k.a. bi-weekly), or once a month. The most common of these is bi-weekly.

Let's assume, then, that you are borrowing \$100, with one payment of \$117.65 due in two weeks. Note that the compounding occurs every two weeks.

What APR, compounding bi-weekly, would result in \$100 rising to \$117.65 in two weeks' time?

3. Look at credit card terms below. Suppose your first charge on this card is a \$1000 television set. At the end of month #1 you receive your first bill and dutifully make the minimum required payment. You repeat this process at the end of months #2 and #3. What amount will be on your statement that you receive at the end of month #4 if the television set is the only item charged to the credit card?

Terms:

Annual Interest Rate: 19.99%, calculated daily.

Grace Period for Purchases: 21 days from statement date if each month we receive payment of your full balance by the payment due date set out in your account statement. If the full balance is not paid by the payment due date, interest accrues from the first date of the statement period following your transaction. Interest will accrue on new purchases from their transaction date and no grace period will apply if your prior month's account balance is not paid in full by the due date.

Minimum Payment Due: is the greater of A) or B):

(A) \$10.00 plus item any interest accrued during the statement period

OR

(B) 3% of the new balance as shown on your account statement.