

What is the best deal? – It depends.

Name _____

Name _____

Loan companies offer a variety of options for consolidating debt (Eg. <http://www.quickenloans.com>). This assignment gives you an opportunity to study two offerings.¹

The Problem: Monica's current debt consists of three types of loans: bank card, auto and department store card. The amount she owes, the monthly payment and the interest rates appear in the table below. Her monthly payments total \$521.77.

Monica is having a hard time meeting the monthly payments and is considering consolidating the three loans into one in a way that reduces her monthly payments. She has been offered two options. In both cases she borrows \$25,000 to pay off her existing three loans leaving her with a single loan payment to a loan company.

1. Option A: A \$25,000 home *equity line* of credit based on "7.8% APR annualized over a 10-year term." The loan is amortized at 7.8% with monthly payments of \$162.50. This would give her a \$359.27 reduction in her monthly payment.
2. Option B: A \$25,000 home *equity loan* based on the same 7.8% APR and also amortized over 10 years with monthly payments of \$300.68. The reduction in monthly payments in this case would be only \$221.09.

| <i>Loan Type</i> | <i>Loan Amount</i> | <i>Monthly Payment</i> | <i>APR</i> |
|-----------------------|--------------------|------------------------|------------|
| <i>Current Loans</i> | | | |
| Bank card | \$10,000 | \$203.21 | 18% |
| Auto loan | \$12,500 | \$238.76 | 5.5% |
| Department store card | \$2,500 | \$79.80 | 15% |
| <i>Alternatives</i> | | | |
| Option A | \$25,000 | \$162.50 | 7.8% |
| Option B | \$25,000 | \$300.68 | 7.8% |

Answer questions (a) through (e), and then give Monica your best advice.

You can use the TVM Solver. If you use the TVM Solver you MUST show the inputs that you used and which value you solved for. For parts that you do without the TVM Solver you must show how you computed your answer.

(a) How much does Monica pay to the loan company during the 10 years under Option A?

(b) How much does Monica pay to the loan company during the 10 years under Option B?

¹ Adapted from the Extended Applications & Group Projects on pg 489 of our text. The original problem is based on a Discover[®] Loan Center mailer.

(c) How much money will Monica owe to the loan company at the end of 10 years under Option A?

(d) How much money will Monica owe to the loan company at the end of 10 years under Option B?

(e) If Monica rejects Options A and B and decides to continue making her current monthly payments:

i. How long will it take to pay off each of the original loans (Column 5 of the table below)?

ii. How much money will she pay (Column 6 of the table below)?

| <i>Loan Type</i> | <i>Loan Amount</i> | <i>Monthly Payment</i> | <i>APR</i> | <i>Number of months (i)</i> | <i>Total amount paid</i> |
|-----------------------|--------------------|------------------------|------------|-----------------------------|--------------------------|
| Bank card | \$10,000 | \$203.21 | 18% | | |
| Auto loan | \$12,500 | \$238.76 | 5.5% | | |
| Department store card | \$2,500 | \$79.80 | 15% | | |
| Total | \$25,000 | \$521.77 | | | |

← answer to (ii)

What should Monica do? Why?