Problem 2-53

Using the data from the table below, we can calculate the VLC for each option using the formula:

$$VLC = (P)(CM)(RF)(BLC)$$

Where:

P = Revenue per unit
CM = Contribution Margin
RF = Repurchace Frequency (per year)
BLC = Buyers Life Cycle

	Contribution Price	Contribution Margin	Repurchase Frequency	Defection Rate
	\$26	0.40	3	19%
(a)	\$26	0.45	3	19%
(b)	\$26	0.40	3	16%
(c)	\$26	0.40	4	19%

Computing the VLC for the base case, we have:

$$26 \cdot 0.40 \cdot 3 \cdot \left(\frac{1}{0.19}\right) = \$164.21$$

Option (a) is to increase the contribution margin to 0.45. Computing that gives us:

$$26 \cdot 0.45 \cdot 3 \cdot \left(\frac{1}{0.19}\right) = \$184.74$$

Option (b) is to reduce the customer defection rate to 16 percent. Computing that gives us:

$$26 \cdot 0.40 \cdot 3 \cdot \left(\frac{1}{0.16}\right) = \$195$$

Option (c) is to increase the repurchase frequency to four times per year. Computing that gives us:

$$26 \cdot 0.40 \cdot 4 \cdot \left(\frac{1}{0.16}\right) = \$218.95$$

Based on these results, we can conclude that option (c) is the best way to use \$90,000 in improvement funds.