

Problem 7-44

Given that a college textbook publisher sells a certain e-book for \$40.00. If the fixed cost is \$370,000 with a variable cost per book of \$31.00. In order to find the break-even quantity for this book, we set x = the break-even quantity, and solve for equality. That gives us:

$$40x = 370,000 + 31.00x$$

$$x = 41111$$

Therefore, our break-even quantity for part (a) is 41111 books.

If the variable cost increased 6 percent, which is an increase of \$1.86, that leaves us with a variable cost per book of \$32.86. Using the same equation from part (a), with our new variable cost, we have:

$$40x = 370,000 + 32.86x$$

$$x = 51821$$

Therefore, our break-even quantity for part (b) is 51821 books.

if through better process efficiency the fixed cost decreases by 6 percent, and the variable cost decreases to \$29.40, we have:

$$40x = 347800 + 29.40x$$

$$x = 32811$$

Therefore, the break-even quantity for part (b) is 32811 books.