EXAM FM QUESTIONS OF THE WEEK

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Week of September 24/07

You are given the following information about an investment account:

	Jan. 1, 2006	Mar. 1, 2006	Apr. 1, 2006	T, 2006	Jan. 1, 2007
Account Value (Before deposit or withdrawal)	1000	1080	1020	1180	1300
Deposit			200	X	
Withdrawal		120			

The time-weighted yield rate for 2006 is 13.61%, and the dollar-weighted yield rate is 12.04%. Each month is regarded as $\frac{1}{12}$ of a year. Find the time-weighted and dollar weighted yields if X is changed to $X + 10$, but all other balances, deposits and withdrawals are unchanged.

The solution can be found below.

Week of September 24/07 - Solution

The time weighted return is $\frac{1080}{1000} \times \frac{1020}{960} \times \frac{1180}{1220} \times \frac{1300}{1180+X} - 1 = .1361$.
From this we get $X = 90$.
The dollar weighted return is found from
$1000(1.1204) - 120[1 + .1204(\frac{10}{12})] + 200[1 + .1204(\frac{9}{12})] + 90[1 + .1204(1 - T)] = 1300$.
Solving for T results in $T = \frac{2}{3}$ (yrs) , which translates to September 1.

If X is changed to $X + 10 = 100$, the time-weighted return will be
$\frac{1080}{1000} \times \frac{1020}{960} \times \frac{1180}{1220} \times \frac{1300}{1180+100} - 1 = .1272$.
The dollar-weighted return i will be found from
$1000(1 + i) - 120[1 + \frac{10}{12}i] + 200[1 + \frac{9}{12}i] + 100[1 + \frac{1}{3}i] = 1300$.
Solving for i results in $i = .1108$.