Ralph's Income

Ralph has come into some money and is trying to decide how to invest it. He has identified two alternatives: (i) invest $10 in firm A, or (ii) invest $10 in firm B. Both firms are expected to operate for three periods and liquidate immediately thereafter, and the market rate of interest is 10% per period. Based on the firms' prospectuses, Ralph estimates that his share of cash distributions (dividends) and total (three period) income from the two firms would be as follows.

	Dividends						
	Period						Return of
	1	2	3	=	Total income	+	invested capital
Firm A	$1	$1	$11		$3		$10
Firm B	$0	$0	$13.31		$3.31		$10

Ralph wishes to maximize his consumption opportunities adjusted for time (i.e., present value of consumption).

Required:

1. Compute the net present value (NPV) for the two projects. Which does Ralph prefer? Does this correspond to total income ranking for the two firms? Why or why not?

2. Suppose that Firm A retains its interim period cash flows (from periods one and two) and reinvests them at the market interest rate. What is Ralph's third period dividend or total income from Firm A? How does this compare to Ralph's total income from Firm B?

3. Suppose Ralph reinvests interim cash flows from Firm A on his own private account (say, in other securities) to yield the market rate of interest. What is the increment to Ralph's third period wealth? How does this compare to Ralph's total income from Firm B?

4. Suppose Ralph invests in Firm B but desires interim period cash flows for consumption as afforded by Firm A's distribution pattern. If Ralph borrows funds (at the market rate of interest) to match the interim period dividends planned by Firm A, what share of Firm B's third period distribution does Ralph retain for consumption (after repaying the debt)? How does this compare to Ralph's total income from Firm A? If both Ralph and Firm B can borrow at the market rate of interest, does it matter whether Ralph borrows on his private account or Firm B borrows funds to support interim dividend payments?

5. Based on the foregoing analysis, why do you suppose that economists argue that dividends are irrelevant in complete and perfect markets?