Name:

Mary invests money in an investment. The amounts and corresponding revenue are shown below.

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Deposit | Interest | Balance |
| 0 | $10,000 | N/A | $10,000 |
| 1 | $5,000 | $2,000 | $17,000 |
| 2 | $2,500 | $3,500 | $23,000 |

Assume that interest for year 1 was computed on the balance at the end of year 0, and similarly, the interest in year 2 was computed on the balance from year 1.

Mary is very happy with this investment and declares that the investment met her expectations based on the MARR she set as her investment objective.

(a) What is the effective interest rate of this investment? This value must have been greater or equal to her MARR.

(b) Assuming a MARR of 10%, what is the present value of this investment?

(c) Assuming Mary is in a 20% tax bracket, how much income tax will she pay on this investment?

(d) Finally, what is the after-tax effective interest rate of this investment? Why is this different than (a)?