

Financial Mathematics (BUS2016H)

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Instructions

- This sheet is compiled from past material with minor adjustments and mainly for your own practice.
- Your workings are very important and earn part marks in excel assessments.
- Label columns and make sure your work is understandable.
- Aim to learn more than you already know.
- **Note:** The mark allocations in this sheet are not a true reflection of the actual marking standard.

Good luck and do your best! Remember, the goal is to test your own understanding and identify areas that need revision.

Q1 On 31 December 2024, a company, Yavuso Ltd., announced that it had earned a profit of R5,000,000 in the 2024 calendar year.

On the same day, the company paid a dividend of R3 per share after which the company's share price closed for the year at R46 per share.

To take advantage of the good publicity, the company offers an investment opportunity.

Proposed Investment

A block of 100,000 shares in the company, at R46 per share (the closing share price for 2024).

An eager investor, Muri, decided to take on the investment. Muri is under the assumption that dividends will initially increase by 2% in the following year and at 4% thereafter. Further, he assumes a constant rate of inflation of 4% per annum. Lastly, Muri plans to keep the shares for 20 years. He is uncertain whether to sell or not at this moment.

Calculate the effective real rate of return per annum on this *Proposed Investment*

Hint: Shirely GoalSeek?

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“Remember, preparation is the key to success! Take your time, read each question carefully, and trust in your knowledge. Good luck!”