**Pre-Test: Compound Interest**

**1a.** Ludmila takes a loan of 320 000 Brazilian Real (BRL) from a bank for two years at a nominal annual interest rate of 10%, **compounded half yearly**.

Write down the number of times interest is added to the loan in the two years. *[1 mark]*

**1b.** Calculate the **exact** amount of money that Ludmila must repay at the end of the two years. *[3 marks]*

**1c.** Ludmila estimates that she will have to repay  BRL at the end of the two years.

Calculate the percentage error in her estimate. *[2 marks]*

**2a.** Mandzur, a farmer, takes out a loan to buy a buffalo. He borrows 900 000 Cambodian riels (KHR) for 2 years. The nominal annual interest rate is 15%, compounded **monthly**.

Find the amount of the **interest** that Mandzur must pay. Give your answer correct to the nearest 100 KHR. *[4 marks]*

**2b.** Write down your answer to part (a) in the form . *[2 marks]*

**3a.** Pierre invests 5000 euros in a fixed deposit that pays a nominal annual interest rate of 4.5%, compounded **monthly**, for seven years.

Calculate the value of Pierre’s investment at the end of this time. Give your answer correct to two decimal places. *[3 marks]*

**3b.** Carla has 7000 dollars to invest in a fixed deposit which is compounded **annually**.

She aims to double her money after 10 years.

Calculate the minimum annual interest rate needed for Carla to achieve her aim. *[3 marks]*

**4a.** Minta deposits 1000 euros in a bank account. The bank pays a nominal annual interest rate of 5%, **compounded quarterly**.

Find the amount of money that Minta will have in the bank after 3 years. Give your answer correct to two decimal places. *[3 marks]*

**4b.** Minta will withdraw the money from her bank account when the interest earned is 300 euros.

Find the time, in years, until Minta withdraws the money from her bank account. *[3 marks]*