

## Question 1

## Question 8

(55 marks)

- (a) When a loan of  $\text{€}P$  is repaid in equal repayments of amount  $\text{€}A$ , at the end of each of  $t$  equal periods of time, where  $i$  is the periodic compound interest rate (expressed as a decimal), the formula below can be used to find the amount of each repayment.

$$A = P \frac{i(1+i)^t}{((1+i)^t - 1)}$$

Show how this formula is derived. You may use the formula for the sum of a finite geometric series.

























## Question 7

---

- (b) Conall borrowed to buy a car. He borrowed €15 000 at a monthly interest rate of 0.866%. He made 36 equal monthly payments to repay the entire loan. How much, to the nearest euro, was each of his monthly payments?





