Question 1

Evaluate
(a) \( \log_7 49 \)
(b) \( \log_{10} 0.0001 \)
(c) \( \log_3 3^{1/2} + \log_3 3^{3/2} \)
(d) \( \log_{25} 0.2 \)
(e) \( \log_4 32 + \log_4 2 \)
(f) \( \log_6 \sqrt[4]{72} - \log_6 \sqrt[3]{2} \)

Question 2

(a) If an initial investment of 1000 is worth 1250 at the end of 30 months, what was the interest rate
   i. A monthly compound rate?
   ii. An annual compound rate?

(b) If the growth factor for 1 year is 1.15 what is the interest rate expressed as
   i. An annual compound rate?
   ii. A quarterly compound rate?

(c) Referring to part (b) how much will the investment be worth at the end of 18 months?

(d) If you invest $1000 at a quarterly compound interest rate of 3% how long will it take for your investment to double?