# M339D : January 22nd, 2021.

- HW#0 in Canvas: One question: "Have you read the syllabus?"
- Quiz #1 : · Probability Related
  · Due on Monday @ midnight .

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## Notation. Assumptions. Conventions.

**Def'n.** The continuously compounded, risk-free interest rate is a constant $r$ which allows us to write the accumulation function as

$$a(t) = e^{r \cdot t}$$

### Assumptions.

Single PREVAILING INTEREST RATE:

- the same for borrowing and lending
- the same for everyone
- deterministic and constant

**For convenience:** An infinite line of credit for all.
Money is continuously valued.

**Example.** Say that the continuously compounded risk-free interest rate (ccrfir) equals $r = 0.02$. You invest 100 @ $t=0$. You make no subsequent withdrawals or deposits. What is your balance @ $t = \frac{1}{4}$?

→: $100 e^{0.02(1/4)} = 100 e^{0.005}$

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Note: Borrowing and lending via bonds or savings accounts or loans are all RISKLESS INVESTMENTS.

Next : Risky assets.