

Joshua received a \$10k bonus that he wants to invest for 5 years.

the following M3M Ad (p.134) gives two ^{CD} investment options (certificate of deposit).

term (months)	current interest rate	Annual percentage yield
36	3.40%	3.45%
60	4.36%	4.45%

Joshua can also invest in the stock market and earn 10% per year.

thead does not mention the compounding period, what is that?

$$i = \left(1 + \frac{r}{m}\right)^m - 1 \Rightarrow$$

$$0.0345 = \left(1 + \frac{0.034}{m}\right)^m - 1$$

$$\Rightarrow \left(1 + \frac{0.034}{m}\right)^m = 1.0345$$

m	$\left(1 + \frac{0.034}{m}\right)^m$	
2	1.03429	
4	1.03444	
12	1.03453	→ 52 1.03457

⇒ m = 12
monthly compounding

-Verify for the 5-year CD

$$le = \left(1 + \frac{0.0436}{12}\right)^{12} - 1 = 0.04448 \approx 4.45\%$$

b) Joshua is considering two options:

(i) invest in 5-year CD

(ii) invest for 2 years in the stock market and then in 3-year CD. Stock market earns 10%/year on average.

which is a better investment?

(i) $F = 10 (1.0445)^5$
 $= \$12.432 \text{ K}$

(ii) $F = 10 \times 1.12 \times (1.0345)^3$
 $= \$13.396 \text{ K}$

So (ii) is a better investment but it's risky. It depends on Joshua's risk attitude.