

### Solution 1.33

State University tuition and fees can be paid using one of two plans.

Early-bird: Pay total amount due *one year in advance* and get a 10% discount.

On-time: Pay total amount due when classes start.

If the cost of tuition and fees is \$20,000 per year, (a) how much is paid in the early-bird plan, and (b) at an interest rate of 6% per year, what is the equivalent amount of the savings compared to paying when classes start, that is, 1 year later than the early-bird plan?

*Solution:*

$$(a) \text{ Early-bird: } 20,000 - 20,000(0.10) = \$18,000$$

$$(b) \text{ Equivalent future amount} = 18,000(1 + 0.06) \\ = \$19,080$$

$$\text{Savings} = 20,000 - \$19,080 \\ = \$920$$