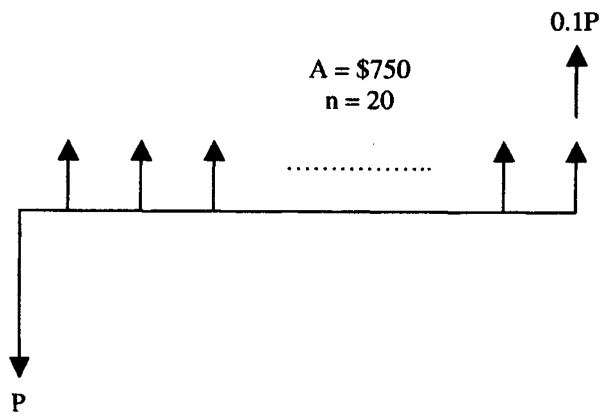
5-13

P = \$100 (P/A, 6%, 6) + \$100 (P/G, 6%, 6)
= \$100 (4.917) + \$100 (11.459)
= <u>\$1,637.60</u>

5-14



PW of Cost = PW of Benefits

P = \$750 (P/A, 7%, 20) + 0.1P (P/F, 7%, 20)
= \$750 (10.594) + 0.1P (0.2584)
= \$7945 + 0.02584P

P = \$7945/(1-0.02584)
= \$7945/0.97416
= <u>\$8156</u>

5-15

Determine the cash flow:

Year	Cash Flow
0	-\$4,400
1	\$220
2	\$1,320
3	\$1,980
4	\$1,540

5-29

Find i:

(A/P, i, 60) = A/P = \$250/\$12,000 = 0.0208

From tables, i = ¾% per month = <u>9% per year</u>

5-30

$i_{month} = (1 + (0.045/365))^{30} - 1 = 0.003705$

$P = A[((1 + i)^n - 1)/(i(1 + i)^n)]$
$= \$199\ [((1.003705)^{60} - 1)/(0.003705\ (1.003705)^{60})]$
$= \underline{\$10,688}$

5-31

P = the first cost = \$980,000
F = the salvage value = \$20,000
AB = the annual benefit = \$200,000

Remember our convention of the costs being negative and the benefits being positive. Also, remember the P occurs at time = 0.

NPW = - P + AB (P/A, 12%, 13) + F (P/F, 12%, 13)
= -\$980,000 + \$200,000 (6.424) + \$20,000 (0.2292)
= \$309,384

<u>Therefore, purchase the machine, as NPW is positive.</u>

5-32

The market value of the bond is the present worth of the future interest payments and the face value on the current 6% yield on bonds.

A = \$1,000 (0.08%)/(2 payments/year) = \$40
P = \$40 (P/A, 3%, 40) + \$1,000 (P/F, 3%, 40)
= \$924.60 + \$306.60
= <u>\$1,231.20</u>

5-35

P = A/*i* = \$67,000/0.08 = \$837,500

5-36

Two assumptions are needed:
1) Value of an urn of cherry blossoms (plus the cost to have the bank administer the trust) – say \$50.00 / year

2) A "conservative" interest rate—say 5%

P = A/*i* = \$50.00/0.05 = <u>\$1,000</u>

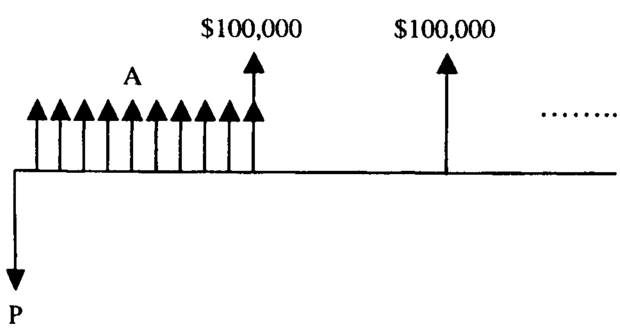
5-37

Capitalized Cost = PW of an infinite analysis period

When n = ∞ or P = A/*i*

PW = \$5,000/0.08 + \$150,000 (A/P, 8%, 40)/0.08
= \$62,500 + \$150,000 (0.0839)/0.08
= <u>\$219,800</u>

5-38



Compute an A that is equivalent to \$100,000 at the end of 10 years.

A = \$100,000 (A/F, 5%, 10) = \$100,000 (0.0795) = \$7,950

For an infinite series,

P = A/*i* = \$7,950/0.05 = <u>\$159,000</u>