* 1. (F/P, 10%, 20) = 6.728
  2. (A/F, 4%, 8) = .1085
  3. (P/A,8%,20) = 9.818
  4. (A / P,20%,28) = .2012
  5. (F/A,30%,15) = 167.286

1. F = $20M

i = 0.15

P = F(P/F,15%,2) = $20M(0.7561) = $15.122M

1. P = $95M

n = 3

i = 12%

F = P(F/P,12%, 3) = $95M(1.405) = $133.475M

1. P = $175,000

i = 10%

n = 6

F = P(F/P, 10%, 6) = $175,000(1.772) = $310,100

1. I = 10%

A(year 1-5) = $8M

P = A(P/A, 10%, 5) = $8M(3.791) = $30.328M

1. P = $10M

I = 10%

n = 10

F = P(F/P, 10%, 10) = $25.94M

A = F(A/F,10%, 10) = $1.63M

1. N = 5

Want: $290,000

$100,000 year 2

$75,000 year 3

Year 4 = ?

I = 9%

F1 = P1(F/P, 9%, 3) = $129,502.90

F2 = P2(F/P, 9%, 2) = $89,107.50

F3 = P3(F/P, 9%, 1) = $290,000 – ($129,502.90 + $89,107.50) = 71389.60

P3 = F3(P/F, 9%, 1) = $65,495.05

1. A = $100,000 +$125,000 = $225,000

I = %15

N = 3

P = A(P/A,15%,3) = $513,725.65

1. $100,000 year 1

$110,000 year 2

+$10,000 a year after that for five years

N = 5

G = $10,000

P = G(P/G,i%,n)

Pg = $68,618.02

P = A(P/A, 10%, 5) + G(P/G, 10%, 5) = $100,000(3.791) + $10,000(6.862) = $379,100 + $68,620 = $447,720

1. Thirty Three

P = $475,000

A = $25,000

G = ?

N = 8

I = 10%

P = A(P/A, 10%, 8) + G(P/G, 10%, 8)

$475,000 = $25,000(5.335) + G(16.029)

G = $341,625/16.029 = $21,312.93

1. A = $15,000/person / year

G = 10,000,000 people / year

N = 5

I = 8%

P = $2.45M

(1-(1.15)/(1.08)^5)/(.08-.15) = $7.90B

1. N = 10

F = $80,000

I = 10%

g = -8%

A1 = ?

P = F(P/F, 2%, 10) = $80,000(0.8203) = $65,624

Ch3:

1. *Simple interest is to nominal interest rate as compound interest is to what?*

Effective interest rate.

1. ldentify the following interest rate statements as either nominal or effective:

*(a)* 1.3% per month compounded weekly; Nominal

*(b)* 0.5% per week compounded weekly; Effective

*(c)* effective 15% per year compounded monthly; Effective

*(d)* nominal 1.5% per month compounded daily; Nominal

*(e)* 15% per year compounded quarterly; Nominal

1. 3.6% effective per quarter = 3.6%/3 = 1.2% per month
2. F = $190,000

I = 2% / month

N = 3 years = 36 months

P = F(P/F, 2%, 36) = $93,142.40

1. F = ?

N = 5 years = 60 months

I = 1.5%/month

P = $192,000

F = P(F/P,1.5%, 60) = $469,098.20

1. F = $50,000

I = 12% / year = 3% / quarter

N = 8 years = 32 quarters

P = F(P/F,3%,32) = $19,416.85

1. P1 = $120,000 (2 years) -> F1 = P(F/P,10.5%,3) = $146,523.00

P2 = $180,000 (1 years) -> F2 = P(F/P,10.5%,2) = $198,900.00

P3 = $250,000 (0 years) -> F3 = P(F/P,10.5%,1) = $250,000.00

N = 3

I = 10% /year compounded continuously

P = ?

F = Pe^(i \* n)

Ieff = e^r – 1 = e^i – 1 = 10.5%

F = F1 + F2 + F3 = $595,423.00

P = $441,304.92

1. Savings of $13,000 per 6 months = $13000/6 /1.01^6 = $2041.10 / month

MARR of 1% per month

N = 2.5 years = 5 6-month periods = 30 months

P = ?

P = A(P/A,1%,30) = $52,676.11

1. Cost = $12,000 / quarter

Cost(new) = $2000 / quarter

I = 12% / year compounded quarterly = 3% / quarter

n = 2 years = 8 quarters

P = ? = A(P/A,12%,8) =$12,000(P/A,3%,8) = $84,236.31

P(new) = ? = A(P/A, 12%, 8) = $2,000(P/A, 3%, 8) = $14,039.38

P(diff) = P – P(new) = $70,196.92

1. N = 200

$1.8T

I = 10% / year compounded monthly = 0.833%

A = F (A/F,0.833%,200\*12) = $15,000,000,000 / month

F = A(F/A,0.833%,12) = $188,483,521,394.33

1. P = $950

A = $10/day = $300/month

A per month = ?

I = 12% / year compounded monthly = 1% / month

30 days per month

3-year pump life

N = 3 years = 36 months

F = P(F/P,1%,$300,36) = $14,282.29

A = A(A/F,1%,$300,36) = $331.55

1. A = $1000 / month = $6000 / 6-month period

I = 10% / year compounded semiannually = 5% / 6-month period

N = 10 years = 20 6-month periods

F = A(F/A,5%,$6000,20) = $198,395.72