1 Skills Practice

1. In each row of the table below, some of the quantities in the equation

$$A = P(1 + rt)$$

are given. Fill in the missing values.

A	P	r	t
5	4	.03	
5	4		6
5		.03	6
	4	.03	6

2. In each row of the table below, some of the quantities in the equation $i = r/m$ are given. Fill in the missing values.

i	r	m
	.04	12
.02	.08	
.002		24

3. In each row of the table below, some of the quantities in the equation $n = tm$ are given. Fill in the missing values.

n	t	m
18		12
	5	4
156	3	

4. In each row of the table below, some of the quantities in the equation

$$A = P(1 + i)^n$$

are given. Fill in the missing values.

A	P	i	n
5	4	.03	
5	4		6
5		.03	6
	4	.03	6

5. In each row of the table below, some of the quantities in the equation

$$S = R\left[\frac{(1+i)^n - 1}{i}\right]$$

are given. For each row, fill in the values for the missing quantity.

S	R	i	n
100	4	.03	
100		.03	20
	4	.03	20

6. In each row of the table below, some of the quantities in the equation

$$P = R\left[\frac{1 - (1+i)^{-n}}{i}\right]$$

are given. For each row, fill in the values for the missing quantity.

P	R	i	n
100	4	.03	
100		.03	20
	4	.03	20
25000	500	.038/12	

Solutions key

1. $t = (A/P - 1)/r \approx 8.33$,
   $r = (A/P - 1)/t \approx .0417 = 4.17\%$,
   $P = A/(1 + rt) \approx 4.24$,
   $A = P(1 + rt) \approx 4.72$

2. $i = r/m \approx .00333 = .333\%$,
   $m = r/i = 4$,
   $r = im = .048 = 4.8\%$

3. $t = n/m = 1.5$,
   $n = tm = 20$,
   $m = n/t = 52$

4. $n = (\ln(A/P))/(\ln(1 + i)) \approx 7.55$,
   $i = (A/P)^{1/n} - 1 \approx .0379 = 3.79\%$,
   $P = A/(1 + i)^n \approx 4.19$,
   $A = P(1 + i)^n \approx 4.78$

5. $n = (\ln(Si/R + 1)/(\ln(1 + i)) \approx 18.9$,
   $R = S/(\text{stuff in square brackets}) \approx 3.72$,
   $S = R \cdot (\text{stuff in square brackets}) \approx 107.48$

6. $n = -(\ln(1 - Pi/R)/(\ln(1 + i)) \approx 46.9$,
   $R = P/(\text{stuff in square brackets}) \approx 6.72$,
   $P = R \cdot (\text{stuff in square brackets}) \approx 59.51$,
   $n = -(\ln(1 - Pi/R)/(\ln(1 + i)) \approx 54.5$ (example in-class 9/24)