(5) Single advance, single payment transaction. The general equation in paragraph (b)(8) of this section can be put in the special forms below for single advance, single payment transactions. Forms 1 through 3 are for the direct determination of the annual percentage rate under special conditions. Form 4 requires the use of the iteration procedure of paragraph (b)(9) of this section and can be used for all single advance, single payment transactions regardless of term.

Form 1 - Term less than 1 year:

$$I = 100w\left(\frac{P}{A} - 1\right)$$

Form 2 - Term more than 1 year but less than 2 years:

$$I = \frac{50}{f}\left\{\left[(1 + f)^2 + 4f\left(\frac{P}{A} - 1\right)\right]^{1/2} - (1 + f)\right\}$$

Form 3 - Term equal to exactly a year or exact multiple of a year:

$$I = 100\left[\left(\frac{P}{A}\right)^{1/t} - 1\right]$$

Form 4 - Special form for iteration procedure (no restriction on term):

$$A = \frac{P}{(1 + fi)(1 + i)^t}$$

Example (i): Single advance, single payment (term of less than 1 year, measured in days)

Amount advanced (A) = $1000. Payment (P) = $1080.
Unit-period = 255 days. Unit-periods per year (w) = 365/255.
Advance, 1-3-78. Payment, 9-15-78.
From 1-3-78 through 9-15-78 = 255 days. (t = 1; f = 0)
Annual percentage rate (I) = wi = .1145 = 11.45%. (Use Form 1 or 4.)

Example (ii): Single advance, single payment (term of less than 1 year, measured in exact calendar months)

Amount advanced (A) = $1000. Payment (P) = $1044.
Unit-period = 6 months. Unit-periods per year (w) = 2.
Advance, 7-15-78. Payment, 1-15-79.
From 7-15-78 through 1-15-79 = 6 mos. (t = 1; f = 0)
Annual percentage rate (I) = wi = .0880 = 8.80%. (Use Form 1 or 4.)

Example (iii): Single advance, single payment (term of more than 1 year but less than 2 years, fraction measured in exact months)

Amount advanced (A) = $1000. Payment (P) = $1135.19.
Unit-period = 1 year. Unit-periods per year (w) = 1.
Advance, 7-17-78. Payment, 1-17-80.
From 1-17-79 through 1-17-80 = 1 unit-period. (t = 1)
From 7-17-78 through 1-17-79 = 6 mos. (f = 6/12)
Annual percentage rate (I) = wi = .0876 = 8.76%. (Use Form 2 or 4.)