TABLE 2

BALANCE OUTSTANDING AND DISTRIBUTION OF MONTHLY PAYMENT, FIRST 3 MONTHS AND LAST MONTH OF INSTALLMENT PERIOD, BASED ON ILLUSTRATIVE EXAMPLE

Beginning of month		*End of month*		
Month	*Balance outstanding*[1]	*Paid on principal*[2]	*Payment on finance charge*[3]	*Total paid*[4]
(1)	(2)	(3)	(4)	(5)
	Dollars	*Dollars*	*Dollars*	*Dollars*
Priority method				
1	150	10	10	20
2	140	20	0	20
3	120	20	0	20
8	20	20	0	20
Constant-ratio method				
1	150.00	18.75	1.25	20
2	131.25	18.75	1.25	20
3	112.50	18.75	1.25	20
8	18.75	18.75	1.25	20
Direct-ratio method				
1	150.00	17.78	2.22	20
2	132.22	18.06	1.94	20
3	114.16	18.33	1.67	20
8	19.72	19.72	0.28	20
Residuary method				
1	150	20	0	20
2	130	20	0	20
3	110	20	0	20
8	10	10	10	20
Simple-discount method				
1	160	—	—	20
2	140	—	—	20
3	120	—	—	20
8	20	—	—	20
Simple-interest method				
1	150.00	19.70	0.30	20
2	130.30	19.42	.58	20
3	110.88	19.14	.86	20
8	17.85	17.85	2.15	20
Small-loan and present-value methods				
1	150.00	17.81	2.19	20
2	132.19	18.07	1.93	20
3	114.12	18.34	1.66	20
8	19.72	19.72	0.29	20

[1] The balances in this column are shown in table 1 for each month, by methods.

to be deducted from the final payment or, if it amounts to more than the periodic payment, any excess is deducted from the next-to-last payment.[5] Under this plan, the seller or lender therefore credits his income account out of the last installment(s).

By each of these methods, the service charge is considered to be $10 in the illustrative problem. In each case, the account balance of the purchaser is considered to start at $150 and to be reduced monthly during the term of the contract as shown in table 1. However, the amounts by which the account balances are reduced vary according to the method used in taking the payments into income, as shown in table 2. From the total of the account balances (table 1) and the service charge, the rates according to the four methods described above may be computed as follows:

Priority $\frac{\$10}{\$710\times 1/12}=0.169$

Constant ratio $\frac{\$10}{\$675\times 1/12}=0.178$

Direct ratio $\frac{\$10}{\$686.64\times 1/12}=0.175$

Residuary $\frac{\$10}{\$640\times 1/12}=0.1875$

Formulas for the computation of these rates and those for the other four methods are shown in table 3. Use of these formulas makes it unnecessary to construct a table of beginning-of-the-month balances in computing a rate, although the latter procedure may sometimes be as easy as the use of formulas, particularly for the shorter installment terms. These formulas are applicable only for the common case in which all installments are equal in amount.

[5] Richtmeyer and Foust's *Business Mathematics* (1950 edition), p. 213.

[2] Except for simple-discount method, the payments on principal shown in this column add to $150.

[3] Except for simple-discount method, the payments on the finance charge shown in this column add to $10.

[4] For each method, the monthly payments in this column total $160.