

**Amortization schedule for 24-period,
\$1,000 loan with 10% effective rate of interest**

#	Pmt	Interest	Principal	O/S Bal.
1	\$111.30	\$100.00	\$11.30	\$988.70
2	\$111.30	\$98.87	\$12.43	\$976.27
3	\$111.30	\$97.63	\$13.67	\$962.60
4	\$111.30	\$96.26	\$15.04	\$947.56
5	\$111.30	\$94.76	\$16.54	\$931.01
6	\$111.30	\$93.10	\$18.20	\$912.82
7	\$111.30	\$91.28	\$20.02	\$892.80
8	\$111.30	\$89.28	\$22.02	\$870.78
9	\$111.30	\$87.08	\$24.22	\$846.55
10	\$111.30	\$84.66	\$26.64	\$819.91
11	\$111.30	\$81.99	\$29.31	\$790.60
12	\$111.30	\$79.06	\$32.24	\$758.36
13	\$111.30	\$75.84	\$35.46	\$722.90
14	\$111.30	\$72.29	\$39.01	\$683.89
15	\$111.30	\$68.39	\$42.91	\$640.98
16	\$111.30	\$64.10	\$47.20	\$593.78
17	\$111.30	\$59.38	\$51.92	\$541.85
18	\$111.30	\$54.19	\$57.11	\$484.74
19	\$111.30	\$48.47	\$62.83	\$421.91
20	\$111.30	\$42.19	\$69.11	\$352.81
21	\$111.30	\$35.28	\$76.02	\$276.79
22	\$111.30	\$27.68	\$83.62	\$193.16
23	\$111.30	\$19.32	\$91.98	\$101.18
24	\$111.30	\$10.12	\$101.18	\$0.00
Total	\$2,671.19	\$1,671.19	\$1,000.00	-

**Sinking Fund Schedule for 24-period,
\$1,000 loan with 10% effective rate of interest**

A	B	C	D	E	F	G
#	Pmt	Interest Pmt	SF Dep.	Int. Earned on S. Fund	Sinking Fund Bal.	O/S Bal.
1	\$111.30	\$100.00	\$11.30	\$0.00	\$11.30	\$988.70
2	\$111.30	\$100.00	\$11.30	\$1.13	\$23.73	\$976.27
3	\$111.30	\$100.00	\$11.30	\$2.37	\$37.40	\$962.60
4	\$111.30	\$100.00	\$11.30	\$3.74	\$52.44	\$947.56
5	\$111.30	\$100.00	\$11.30	\$5.24	\$68.99	\$931.01
6	\$111.30	\$100.00	\$11.30	\$6.90	\$87.18	\$912.82
7	\$111.30	\$100.00	\$11.30	\$8.72	\$107.20	\$892.80
8	\$111.30	\$100.00	\$11.30	\$10.72	\$129.22	\$870.78
9	\$111.30	\$100.00	\$11.30	\$12.92	\$153.45	\$846.55
10	\$111.30	\$100.00	\$11.30	\$15.34	\$180.09	\$819.91
11	\$111.30	\$100.00	\$11.30	\$18.01	\$209.40	\$790.60
12	\$111.30	\$100.00	\$11.30	\$20.94	\$241.64	\$758.36
13	\$111.30	\$100.00	\$11.30	\$24.16	\$277.10	\$722.90
14	\$111.30	\$100.00	\$11.30	\$27.71	\$316.11	\$683.89
15	\$111.30	\$100.00	\$11.30	\$31.61	\$359.02	\$640.98
16	\$111.30	\$100.00	\$11.30	\$35.90	\$406.22	\$593.78
17	\$111.30	\$100.00	\$11.30	\$40.62	\$458.15	\$541.85
18	\$111.30	\$100.00	\$11.30	\$45.81	\$515.26	\$484.74
19	\$111.30	\$100.00	\$11.30	\$51.53	\$578.09	\$421.91
20	\$111.30	\$100.00	\$11.30	\$57.81	\$647.19	\$352.81
21	\$111.30	\$100.00	\$11.30	\$64.72	\$723.21	\$276.79
22	\$111.30	\$100.00	\$11.30	\$72.32	\$806.84	\$193.16
23	\$111.30	\$100.00	\$11.30	\$80.68	\$898.82	\$101.18
24	\$111.30	\$100.00	\$11.30	\$89.88	\$1,000.00	\$0.00
Total	\$2,671.19	\$2,400.00	\$271.19	\$728.81	-	-

Note that $1,000 = D \cdot s_{\overline{24}|10\%} \rightarrow D = 11.30$

$$\sum (\text{Amortization interest payments}) = \sum (\text{Sinking fund interest payments}) - \sum (\text{Sinking fund interest earned})$$

*This relationship between sinking funds and amortization only holds when the interest credited on the sinking fund is equal to the interest rate charged on the loan!

6.20, p. 197 of text: A has borrowed \$10,000 on which interest is charged at 10% effective. A is accumulating a sinking fund at 8% effective to repay the loan. At the end of 10 years the balance in the sinking fund is \$5000. At the end of the 11th year, A makes a total payment of \$1500.

a) How much of the \$1500 pays interest currently on the loan?

b) How much of the \$1500 goes into the sinking fund?

c) How much of the \$1500 should be considered as interest?

d) How much of the \$1500 should be considered as principal?

e) What is the sinking fund balance at the end of the 11th year?

6.24, p. 198 of the text, and Homework 6, #5: A borrower is repaying a loan with 10 annual payments of \$1000. Half of the loan is repaid by the amortization method at 5% effective. The other half of the loan is repaid by the sinking fund method in which the lender receives 5% effective on the investment and the sinking fund accumulates at 4% effective. Find the amount of the loan. Answer to the nearest dollar.