ANNUAL PERCENTAGE RATE (APR) [PIRNOT 8.6]

TABLE OF FINANCE CHARGES PER $100 (FCPH):

NUMBER OF PAYMENTS	APR						
	10%	11%	12%	13%	14%	15%	16%
6	$2.94	$3.23	$3.53	$3.83	$4.12	$4.42	$4.72
12	$5.50	$6.06	$6.62	$7.18	$7.74	$8.31	$8.88
24	$10.75	$11.86	$12.98	$14.10	$15.23	$16.37	$17.51
36	$16.16	$17.86	$19.57	$21.30	$23.04	$24.80	$26.57
48	$21.74	$24.06	$26.40	$28.77	$31.17	$33.59	$36.03

EX 8.6.2: Nathan has agreed to pay off a $5000 loan for remodeling his house by making 36 payments of $165.

(a) Find the finance charge per $100 financed.

(b) Find the APR using the above table.

(a) Identify all known quantities:

$$(Principal) = P = \$5000, \quad (Payment) = \$165, \quad (\#\ Payments) = n = 36$$

Compute the finance charge:

$$(Finance\ Charge) = FC = [(\#\ Payments) \times (Payment)] - (Principal) = [(36)(\$165)] - \$5000 = \$940$$

Compute the finance charge per $100 financed (FCPH):

$$FCPH = \frac{FC}{P} \times 100 = \frac{940}{5000} \times 100 = \boxed{\$18.80}$$

(b) In the "36 payments" row of above table, the closest entry to $18.80 is $19.57 which is in the "12%" column.

$\therefore$ $\boxed{12\%\text{APR}}$

NOTE: Here's how to determine which entry in the row is closest to $18.80: (Subtract each entry from 18.80)

$18.80 - 17.86 = 0.94$

$19.57 - 18.80 = 0.77 \quad \longleftarrow$ Smallest distance from 18.80 $\implies$ 19.57 is the closest table entry to 18.80