$\boxed{p.7}$ 2, 3, 4, 5, 8, 9, 10 <u>Project 1.1</u>

2 a, b, <u>c</u>, d, 3 a, b, c, <u>d</u>, 4 a, b, c, d, 5 a, <u>b</u>, c, d, 8, <u>9</u>, 10

<u>15 + 30</u>

<u>Proj 1.1</u>

(2c) $\{\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}, \frac{1}{32}, \dots\}$ $\{\frac{1}{2^n}\}_{n=1}^{\infty}$ $a_n = \frac{1}{2^n}$ $\left(a_{n+1} = \frac{1}{2}a_n,\ a_0 = \frac{1}{2}\right)$

(3d) $\{1, 8, 29, 92, \dots\}$ Let $x_0 = 1$, $x_1 = 3x_0 + 5$, $\dots$, $x_{n+1} = 3x_n + 5$ or $\Delta x_n = 2x_n + 5$
$= x_n + 7 \cdot 3^n$

(5b) $a_{n+1} = 2a_n + 6$, $a_0 = 0$, $a_1 = 2a_0 + 6 = 6$, $a_2 = 2a_1 + 6 = 4a_0 + 18 = 18$

$a_3 = 2a_2 + 6 = 2(4a_0 + 18) + 6 = 8a_0 + 42 = 42$

(9) From class, $P_n = (1+i)^n \cdot P_0 - M\frac{(1+i)^n - 1}{i}$, $i = 0.5\% = 0.005$ $n = 360$

$P_0 = 100{,}000$, $P_{360} = 0$. $M = \frac{i(1+i)^n P_0}{(1+i)^n - 1} = \frac{0.005(1.005)^{360} \cdot 100000}{(1.005)^{360} - 1} = 599.55$

<u>Proj 1.1</u> The car purchases with the plans given using the formula above would mean the typical buyer of the Saturn would pay \$236.31/month for 5 yrs or \$15,178.60. By paying \$475/mo, the car would be paid off in 28 months at a total cost of \$14,556.53. For the Cavalier, the typical buyer would pay \$224.65 for 5 yrs or \$14,979 (including down payment). With \$475/mo, the cost of this car reduces to \$14,184.98. For the Hyundai, the typical buyer would pay \$282.21/mo for 4 yrs or \$14,046.08. With \$475/mo, the cost of this car reduces to \$13,320.88 and takes 26 months to pay off.

$P_{n+1} = (1 + i/12)P_n - 475$