

$$3.d) PV = \frac{R[1 - (1+i)^{-n}]}{i}$$

$$= \frac{48.50 \left[1 - \left(1 + \frac{0.234}{12} \right)^{-30} \right]}{\left(\frac{0.234}{12} \right)}$$

$$\approx \$1093.73$$

$$4. R = \frac{PVi}{[1 - (1+i)^{-n}]}$$

$$= \frac{1300 \left(\frac{0.18}{12} \right)}{\left[1 - \left(1 + \frac{0.18}{12} \right)^{-24} \right]}$$

$$= \frac{1300 (0.015)}{\left[1 - (1.015)^{-24} \right]}$$

$$\approx 64.90$$

∴ The monthly payments for the stereo will be \$64.90 for 2 yrs.

$$6.a) PV = \frac{R[1 - (1+i)^{-n}]}{i} + \text{Down Payment}$$

$$= \frac{40 \left[1 - \left(1 + \frac{0.18}{12} \right)^{-10} \right]}{\left(\frac{0.18}{12} \right)} + 50$$

$$= \frac{40 \left[1 - (1.015)^{-10} \right]}{0.015} + 50$$

$$\approx 418.89$$

∴ The selling price of the DVD/CD player was \$418.89.

$$b) \text{Interest Paid} = 450 - 418.59$$

$$= 31.11$$

∴ Rocco will have paid \$31.11 in interest.

$$7. R = \frac{PVi}{[1 - (1+i)^{-n}]}$$

$$= \frac{128000 \left(\frac{0.0065}{12} \right)}{\left[1 - (1.0065)^{-300} \right]}$$

$$\approx 971.03$$

∴ Emily will be able to take out \$971.03/mth for 25 yrs.

9. I Purchasing Through Dealership

$$PV = \$32000$$

$$i = \frac{0.024}{12} \text{ or } 0.002$$

$$n = 5 \times 12 \text{ or } 60$$

$$R = \frac{PVi}{[1 - (1+i)^{-n}]}$$

$$= \frac{32000 (0.002)}{\left[1 - (1.002)^{-60} \right]}$$

$$\approx 566.51$$

II Purchasing Through Bank Loan

$$PV = \$29000$$

$$i = \frac{0.054}{12} \text{ or } 0.0045$$

$$n = 60$$

$$R = \frac{29000 (0.0045)}{\left[1 - (1.0045)^{-60} \right]}$$

$$\approx 552.60$$

$$\text{Total Cost} = 552.60 \times 60$$

$$= \$33156.00$$

$$\text{vs T.C.} = 566.51 \times 60$$

$$= \$33990.60$$

∴ Even though the interest rate is higher at the bank, the monthly payments would still be lower because of the \$3000 reduction in the price of the vehicle.

15. a) Option B

$$PV = 660\,000$$

$$i = \frac{0.0676}{52} \text{ or } 0.0013$$

$$n = 52 \times 25 \text{ or } 1300$$

$$R = \frac{PVi}{[1 - (1+i)^{-n}]}$$

$$= \frac{660\,000 (0.0013)}{[1 - (1.0013)^{-1300}]}$$

$$\approx 1052.40$$

\therefore Option B is better since it would pay an extra \$52.40/wk.