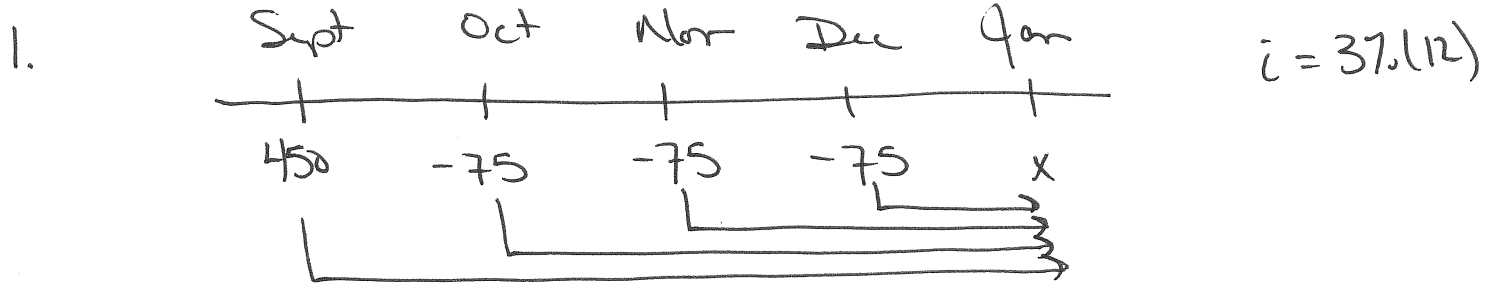


Ch 3 Practice Problems



$$x = 450 \left(1 + \frac{.03}{12}\right)^4 - 75 \left(1 + \frac{.03}{12}\right)^3 - 75 \left(1 + \frac{.03}{12}\right)^2 - 75 \left(1 + \frac{.03}{12}\right) = \boxed{\$228.39}$$

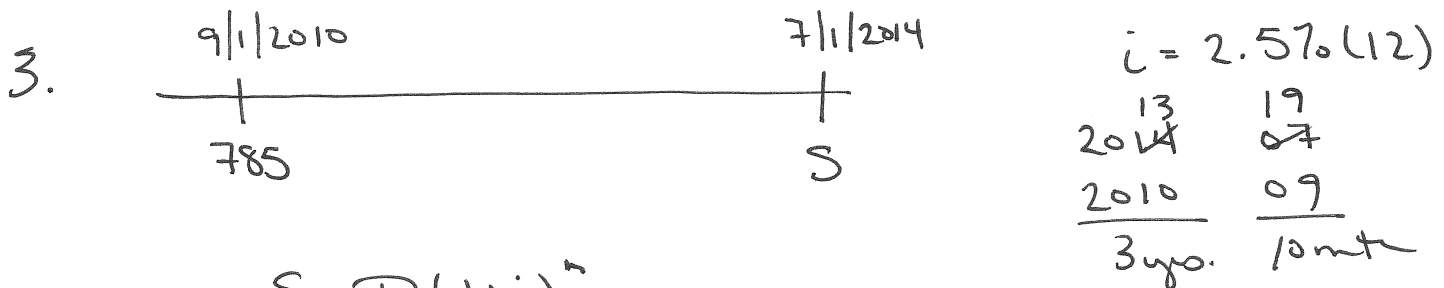
2. 4.25% (4): $i = \left(1 + \frac{.0425}{4}\right)^4 - 1$ 100%

$= 4.318215435\%$ per year

4.2% (∞): $i = (e^{.042} - 1)$ 100%

$= 4.289447875\%$ per year

The loan at 4.2% (∞) is more attractive



$$S = P(1+i)^n$$

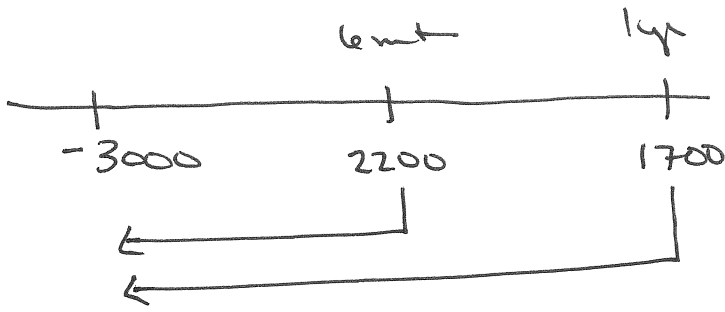
$$= 785 \left(1 + \frac{.025}{12}\right)^{46}$$

$$= \boxed{\$863.87}$$

$$n = 3(12) + 10$$

$$= 46$$

4.



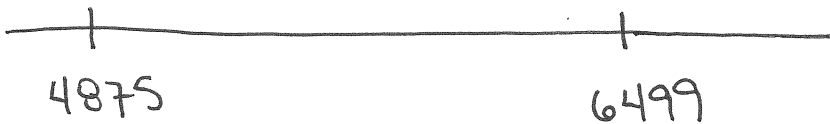
$$NPV @ 18\% (12) = -3000 + \frac{2200}{(1 + \frac{.18}{12})^6} + \frac{1700}{(1 + \frac{.18}{12})^{12}}$$

$$NPV @ 18\% (12) = \$261.91$$

IRR: $0 = -3000 + \frac{2200}{(1+i)^6} + \frac{1700}{(1+i)^{12}}$
 $i = 3.142385\% \text{ per month}$

$$IRR = 37.709\% (12)$$

5.



$$i = 8.75\% (12)$$

$$S = P(1+i)^n$$

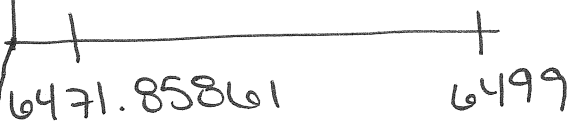
$$6499 = 4875 \left(1 + \frac{.0875}{12}\right)^n$$

$$n = 39.576$$

40 months
 = 3 years
 4 months

$$P(1+i)^{39} = 6471.85861$$

in case you wondered how to do the SI method



39 months
 + 18 days at simple interest

$$S = P(1+it)$$

$$6499 = 6471.85861 (1 + .0875t)$$

$$t = 0.04792... \text{ yrs} = 17.49 \text{ days @ } \frac{365}{\text{day}}$$

6). 8.37% (2): $i = \left(\left(1 + \frac{.083}{2} \right)^2 - 1 \right) 100\%$
 $= 8.472225\%$ per year

8.27% (12): $i = \left(\left(1 + \frac{.082}{12} \right)^{12} - 1 \right) 100\%$
 $= 8.51531218\%$ per year

the investment earning 8.27% (12)
 is more attractive



$$S = P(1+i)^n$$

$$1.38 = 1(1+i)^5$$

$$\bar{i} = 6.65367\%$$
 per half year

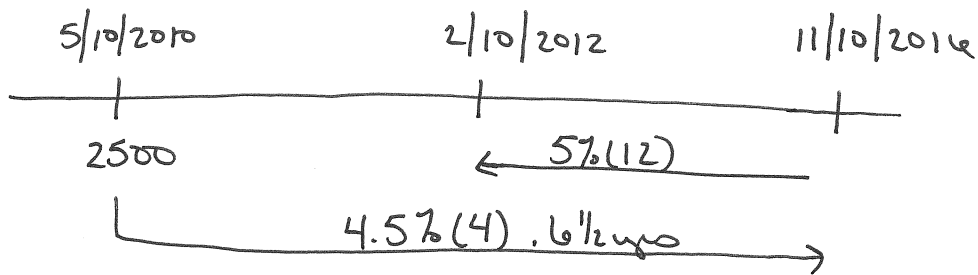
$$i(2) = 13.307\% (2)$$

$$i = \left(\left(1 + \frac{.1330734637}{2} \right)^2 - 1 \right) 100\%$$

$$= 13.75006007\% (1)$$

$$i(2) = 13.307\% (2) \quad i(1) = 13.750\% (1)$$

8)



2016	01
2012	02
<hr/>	
4 yrs.	9 mt

11	14
2012	02
2010	05
<hr/>	
1 yr	9 mt

$$S = P(1+i)^n$$

$$= 2500 \left(1 + \frac{.045}{4}\right)^{26} = \$3343.97$$

$$P = S(1+i)^{-n}$$

$$= 3343.97 \left(1 + \frac{.05}{12}\right)^{-57} = \$2638.35$$

$$S = P(1+i)^n$$

$$2638.35 = 2500(1+i)^7$$

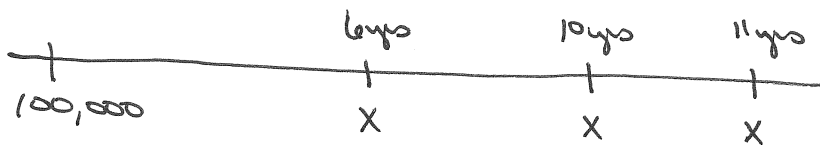
$i = 0.772439\%$ per quarter

$i(4) = 3.08987\%(4)$

Purchase Price = \$2638.35

ROR = 3.0907%(4) or 3.126%(11)

9)



3.5% (∞)

 $S = Pe^{st}$

$$100,000 e^{.035(11)} = X e^{.035(5)} + X e^{.035(1)} + X$$

$$146,961.43 = X (3.226865925)$$

$$X = \boxed{\$45,543.09}$$