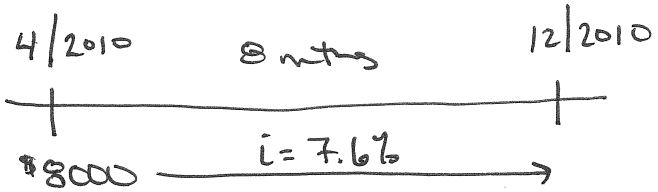
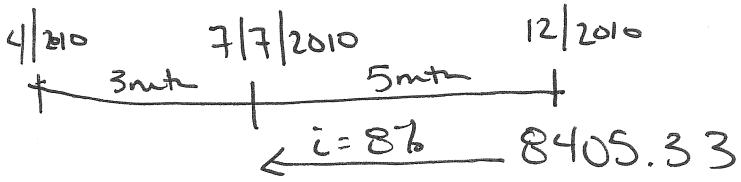
Ch 1+2 Practice Test

1)



$$S = P(1+it)$$
$$= 8000\left(1+.076\left(\tfrac{8}{12}\right)\right) = \$8405.33$$



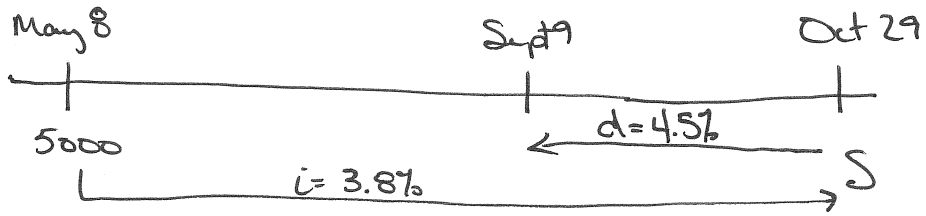
$$P = \frac{S}{1+it} = \frac{8405.33}{1+.08\left(\tfrac{5}{12}\right)} = \$8134.19$$

3rd party paid $8,134.19

RoR for original 6.710%

$$S = P(1+it)$$
$$8134.19 = 8000\left(1+i\left(\tfrac{3}{12}\right)\right)$$
$$i = 6.7095\%$$

2)



May 8 to Oct 29 = 174 days

Sept 9 to Oct 29 = 50 days

May 8 to Sept 9 = 124 days

$$S = P(1+it)$$
$$= 5000\left(1+.038\left(\tfrac{174}{360}\right)\right)$$
$$= \$5091.83$$

$$P = S(1-dt)$$
$$= 5091.83\left(1 - .045\left(\tfrac{50}{360}\right)\right)$$
$$= \$5060.01$$

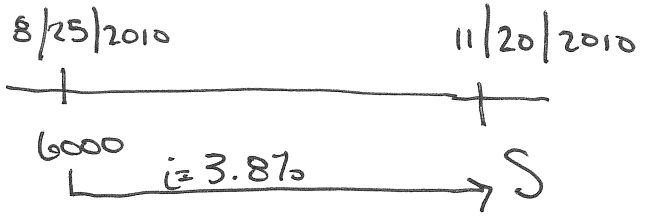
Proceeds from sale = $5060.01

$$S = P(1+it)$$
$$5060.01 = 5000\left(1 + i\left(\tfrac{124}{360}\right)\right)$$
$$i = 3.48445\%$$

$$d = \frac{i}{1+it} = \frac{.0348445}{1+.0348445\left(\frac{124}{360}\right)} = 3.4431\%$$

ROR from May 8 to Sept 9
$i = 3.484\%$ and $d = 3.443\%$

3).

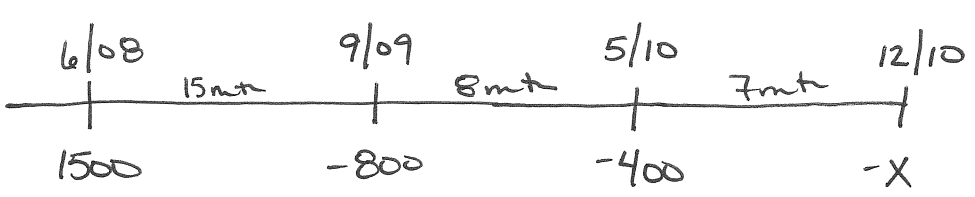


8/25 to 11/20
= 87 days

2010 ≠ leap year

$$S = P(1+it)$$
$$= 6000\left(1 + .038\left(\tfrac{87}{365}\right)\right)$$
$$= \boxed{\$6054.35}$$

4)



$i = 9.5\%$

U.S. Rule

$S = P(1+it)$

$= 1500(1+.095(\frac{15}{12})) = 1678.13$

$Bal_1 = 1678.13 - 800 = 878.13$

$S = P(1+it)$

$= 878.13(1+.095(\frac{8}{12})) = 933.74$

$Bal_2 = 933.74 - 400 = 533.74$

$S = P(1+it)$

$= 533.74(1+.095(\frac{7}{12})) = \boxed{\$563.32 = X}$

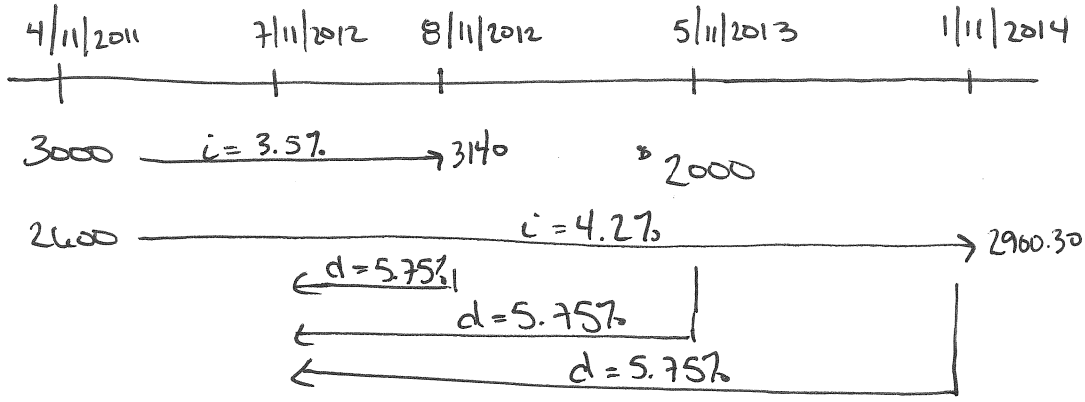
Merchant's Rule

$S = P(1+it)$

$X = 1500(1+.095(\frac{30}{12})) - 800(1+.095(\frac{15}{12}))$

$-400(1+.095(\frac{7}{12})) = \boxed{\$539.08 = X}$

5)



13	13
2014	01
2011	04
2 yrs	9 mnt

13	13
2014	01
2012	07
1 yr.	6 mnt

$S = P(1+it)$

$= 3000\left(1+.035\left(\frac{16}{12}\right)\right) = 3140$

$S = 2600\left(1+.042\left(\frac{33}{12}\right)\right) = 2900.30$

$P = S(1-dt)$

$= 3140\left(1-.0575\left(\frac{1}{12}\right)\right) = 3124.95$

$P = S(1-dt)$

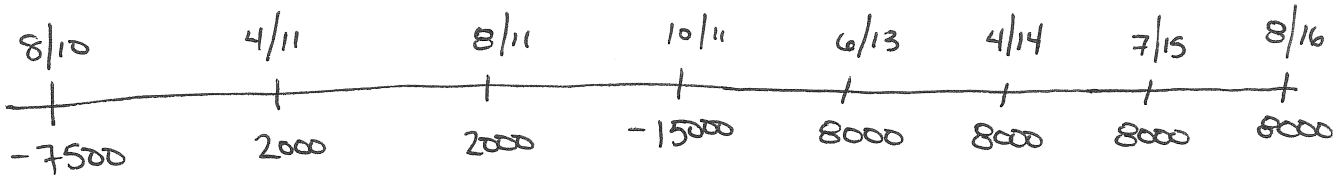
$= 2000\left(1-.0575\left(\frac{10}{12}\right)\right) = 1904.17$

$P = S(1-dt)$

$= 2900.30\left(1-.0575\left(\frac{18}{12}\right)\right) = 2650.15$

Proceeds = $7679.27

c)



$P = \frac{S}{1+it}$

$NPV@15\% = -7500 + \frac{2000}{1+.15\left(\frac{8}{12}\right)} + \frac{2000}{1+.15(1)} + \frac{-15000}{1+.15\left(\frac{14}{12}\right)}$

$+ \frac{8000}{1+.15\left(\frac{34}{12}\right)} + \frac{8000}{1+.15\left(\frac{44}{12}\right)} + \frac{8000}{1+.15\left(\frac{59}{12}\right)} + \frac{8000}{1+.15\left(\frac{7}{6}\right)}$

$= 2881.52$

$$NPV_{@IRR} = 0 = -7500 + \frac{2000}{1+i\left(\frac{8}{12}\right)} + \frac{2000}{1+i(1)} + \frac{-15000}{1+i\left(\frac{14}{12}\right)}$$

$$+ \frac{8000}{1+i\left(\frac{34}{12}\right)} + \frac{8000}{1+i\left(\frac{44}{12}\right)} + \frac{8000}{1+i\left(\frac{59}{12}\right)} + \frac{8000}{1+i(6)}$$

$IRR = 24.3486\ldots\%$

$NPV_{@15\%} = \$2881.52 \quad IRR = 24.349\%$

7)

$P = .96457(150{,}000)$
$= \$144{,}685.50$

$150{,}000$

$P = S(1-dt)$

$144{,}685.50 = 150{,}000\left(1-d\left(\frac{276}{360}\right)\right)$

$d = 4.62137\%$

ROR : $d = 4.621\%$; $i = 4.791\%$

$$i = \frac{d}{1-dt} = \frac{.04621\,30435}{1-.04621\,30435\left(\frac{276}{360}\right)} = 4.79105137\%$$

if $d = 12\%$

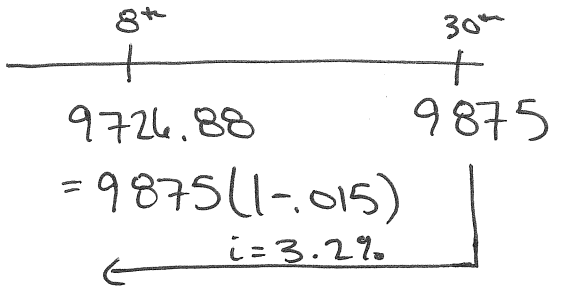
$P = S(1-dt)$

$= 150{,}000\left(1-.12\left(\frac{276}{360}\right)\right) = 136{,}200$

$Bid = \frac{136200}{150000} * 100 =$ **90.8 = Bid**

for 12% return

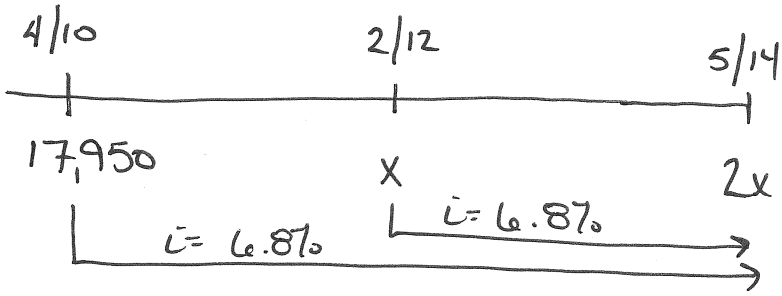
8)



$$P = \frac{S}{1+it} = \frac{9875}{1+.032\left(\frac{22}{360}\right)} = \$9855.73$$

Since $9855.73 > $9726.88, you should pay the bill on the 8th day

9)



$S = P(1+it)$

$$0 = 17950\left(1+.068\left(\frac{49}{12}\right)\right) + x\left(1+.068\left(\frac{27}{12}\right)\right) + 2x$$

$$0 = 22934.11667 + 3.153x$$

$x = \$7,273.74$ = 1st pmt

$2x = \$14,547.49$ = 2nd pmt