

Financial Market Problems: #36 - 40 all

36. Darkroom windowshade company

a. minimum # investors: 3 ✓

- needs to break 51%

b. no they cannot: 38%

investor	shares	percentage
1	20,000	- 20%
2	18,000	- 18%
3	15,000	- 15%
4	10,000	- 10%
5	7,000	- 7%
6-11	5,000 person	

total: 100,000 shares

38% ✓

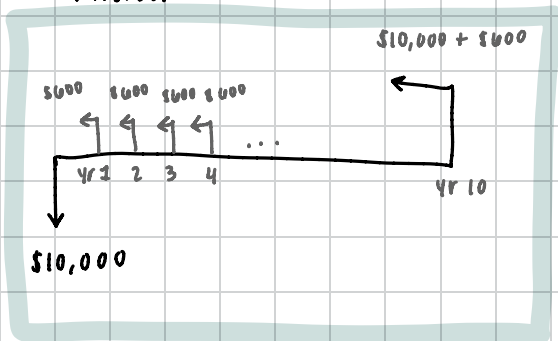
You would need 1, 2, and 3 to agree. 1 and 2 would not be enough.

37. Local water company

\$10,000

ten year maturity

interest: 6%



Bond formula: $\frac{\$10,600}{(1 + 0.06)^t}$

a. less ✓

Right, because the market pays 9% now, not just the bond's 6%.

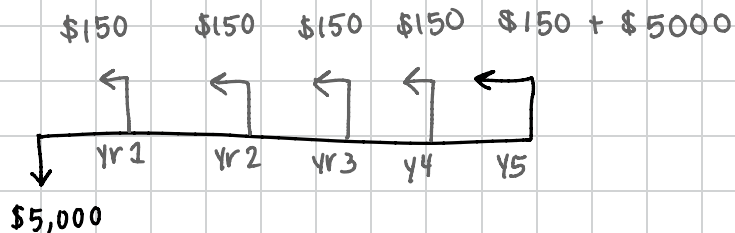
b. \$9724.77 or less ✓

38. Ford Motor companies

FV = \$5,000

coupon payment: \$150/year

5-year mat.



a. 3% interest rate ✓

find interest: $\frac{\$150}{5,000} = 0.03 \times 100 = 3\%$

b. interest rate: 3% → 4%

value decreases ✓

Right, because the market is now paying 4%

39. in bank: $\$100$

interest: 10%

future value: \$10,000

formula:

$$A = P \left(1 + \frac{r}{n} \right)^{nt}$$

Future value amount started w/ rate of interest amount of time
amount of times compounded

$$1000 = P \left(1 + \frac{.1}{1} \right)^{1(10)}$$
$$= P(1.1)^{10}$$

$$\frac{1000}{1.1^{10}} = \frac{P(1.1)^{10}}{1.1^{10}}$$

$$\boxed{\$100 = P}$$

Here's how to do it:

$$FV = PV(1+i)^t$$

$$10,000 = PV(1+.10)^{10}$$

$$10,000 = PV(1.1)^{10}$$

$$PV = \frac{10,000}{(1.1)^{10}}$$

$$PV = \underline{\underline{\$3855}}$$

Invest 3855 today, have 10,000 then.

40.

Alexx: \$5000
5%/year

$$\begin{aligned} \rightarrow FV_A &= PV(1+i)^n \\ &= 5000(1+.05)^{30} \\ &= 5000(1.05)^{30} \\ &= \underline{21,009.71} \end{aligned}$$

Spenser: \$5000
4.75%/year

$$\begin{aligned} \rightarrow PV_S &= PV(1+i)^n \\ &= 5000(1+.0475)^{30} \\ &= (5000)(1.0475)^{30} \\ PV_S &= \underline{\$20,118.28} \end{aligned}$$

$$\begin{array}{r} 21,009.71 \\ - 20,118.28 \\ \hline \boxed{\$149.43} \end{array}$$

Yes EXCEPT Spenser's account manager skims off 0.25%, leaving Spenser with 4.50%.
Recalculate and you see Spenser only ends up with \$18,724. Their difference would be \$2884