Quiz B: 04/29/13 Name & Class Time Key

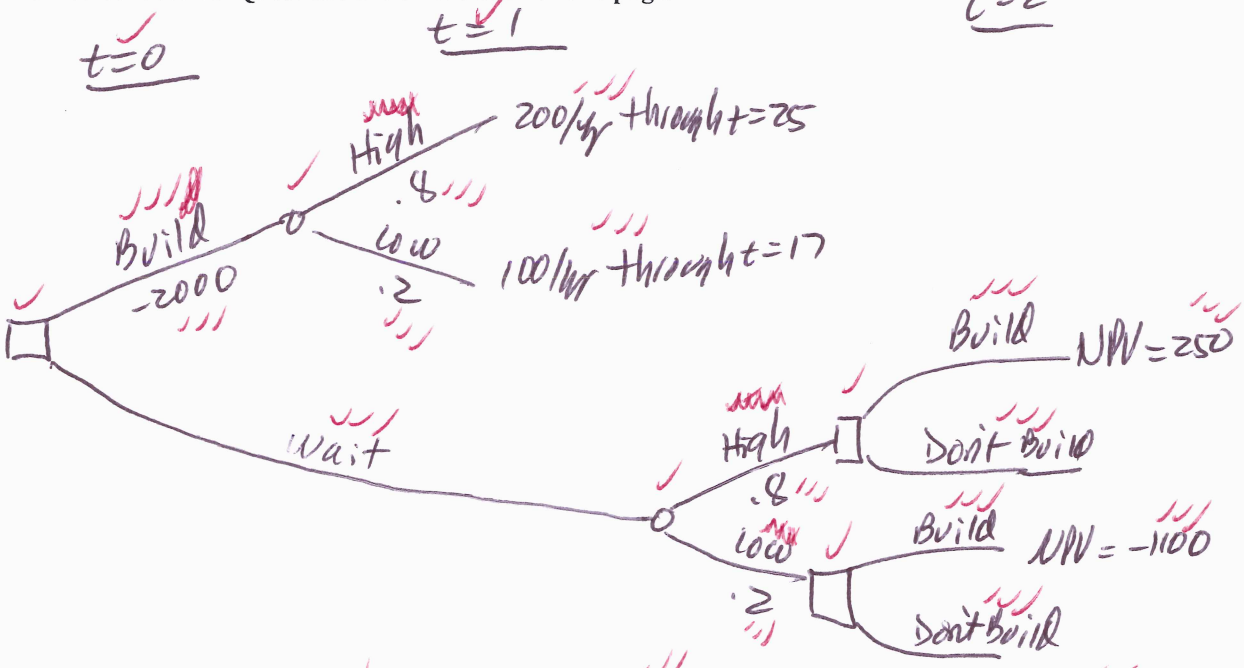
Assume that Steel Glut Inc. is considering whether or not to build a new mill with a cost of capital of 7%. The mill would cost $2 billion to build. There is an 80% chance that steel demand will be high and a 20% chance that steel demand will be low. The mill will generate net annual cash flows of $200 million per year through 25 years from today if steel demand is high, and the mill will generate net annual cash flows of $100 million per year through 17 years from today if steel demand is low. In either case, net cash flows would begin one year from today. However, rather than building the mill now, Steel Glut could wait two years to determine whether the demand for steel is high or low. If steel demand is high, the net present value of the mill two years from today would equal $250 million; and if steel demand is low, the net present value of the mill two years from today would equal – $1.1 billion.

a. Sketch a decision tree that Steel Glut would use in deciding whether to build the mill today or two years from today.

b. Set up the calculations required to determine the net present value of building now. How would you make a decision?

Wall Street Journal Questions are on the back of this page.

a.



b. $NPV(\text{Build}) = .8\left(\left(\frac{200}{.07}\right)\left(1-\left(\frac{1}{1.07}\right)^{25}\right)\right) + .2\left(\left(\frac{100}{.07}\right)\left(1-\left(\frac{1}{1.07}\right)^{17}\right)\right) - 2000$

$\Rightarrow$ Build if $NPV(\text{Build}) > 0$ & $> NPV(\text{wait})$

Scale

84=50
82=49
80=48
78=47
76=45

59=43
52=41
50=39
49=38
47=37

43=35
40=34
31=30