Scale

42 = 75
37 = 71
36 = 69
35 = 67
32 = 63
24 = 59
22 = 57
20 = 56
18 = 55
16 = 54
. 53
5 = [illegible]
4 = 52

Quiz B for 1:15 Class: 7/25/12 Name Key

Assume that New Aquatics Inc's EBIT has a 10% chance of equaling \$3,000,000, a 50% chance of equaling \$7,000,000, and a 40% chance of equaling \$9,000,000. Assume also that New Aquatic's tax rate equals 35% and that the tax rate on equity income equals 25% and that the tax rate on interest income equals 40%.

a. Considering only tax issues, determine the optimal level of interest expense for New Aquatics? (Note: Calculations required).

b. Assume New Aquatics reduced its debt below the level of debt you identified as optimal in part "a". Assume also that New Aquatic's stock price fell when the firm reduced its debt. Ignoring tax issues, how would you explain this reaction?

a. 32

<u>**3 – 7**</u>

$E(\tau_c) = .9(.35) = .315$

$$\tau^* = 1 - \frac{(1-.315)(1-.25)}{1-.4} = +0.14375$$

<u>**7 – 9**</u>

$E(\tau_c) = .4(.35) = 0.14$

$$\tau^* = 1 - \frac{(1-.105)(1-.25)}{1-.4} = -0.075$$

=> optimal = ~~9~~ 7 million

b. 1) The stock price might have fallen because stockholder-manager conflict might be more of a problem with less debt

=> the firm will have more cash left after debt service so management might be tempted to waste it

=> stockholders will not benefit as much from creditors helping to monitor management

=> with less threat of bankruptcy managers may not be as motivated to work hard

2) Reducing debt might signal management lacks confidence in the firm.

=> management might be reluctant to issue debt if they are not confident ~~in the future~~ the firm can meet its interest pmts

=> failure to make payments will result in bankruptcy and the possible (likely) firing of management