Quiz 3: Valuation

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1. Lister Inc. is a stable growth, publicly traded company, expected to grow 2% a year in perpetuity. It is expected to pay out 60% of its earnings as dividends next year and has a cost of equity of 8%.
   a. Estimate the "intrinsic" PE ratio for the company. (1 point)

   b. The company has 100 million shares and 10 million management options outstanding; the options have a value of $5/option. If the firm is expected to earn $ 100 million in net income next year, estimate the fair value per share, based upon the PE ratio you estimated in part a. (3 points)

2. KMD Inc. is a publicly traded steel company that holds 60% of a RAD inc, a publicly traded chemical company. You have the following information on the two companies.

	KMD (Fully consolidated)	RAD (stand alone)
Market price per share	$9	$50
Number of shares	1 billion	100 million
Book value of debt	$ 5 billion	$ 3 billion
Cash	$ 2 billion	$ 1 billion
EBITDA	$ 2.1 billion	$ 700 million
Minority interest	$1.2 billion	None

If you believe that the fair EV/EBITDA multiple for steel businesses is 5, is KMD's steel business under, fairly or over valued? (3 points)

3. You have been asked to value a privately owned restaurant that generated \$ 150,000 in after-tax operating income on \$ 1 million of revenues last year and is expecting earnings to grow 10% a year for the next 5 years. However, the chef, who is also the owner, did not pay himself a salary last year and you estimate that you would have to pay a replacement chef \$100,000 each year (in after-tax dollars). You have run a regression of publicly traded restaurants to get the following:
   EV/Sales = 1.0 + 10 (After-tax Operating Margin) + 5 (Expected Growth in next 5 years)– 0.5 (Beta)
   (Margins and growth are entered in decimals; a 10% margin is input as 0.10)
   If the average beta across publicly traded restaurants is 1.2 and 40% of the risk in the restaurant business comes from the market (correlation = 0.40), estimate the value for the privately owned restaurant in a private transaction, assuming that the buyer is completely undiversified and does not care about liquidity. (3 points)