

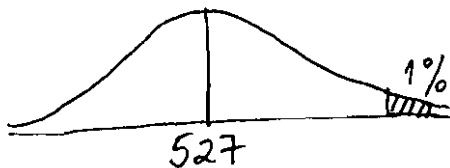
NAME: 1 pt.

### STAT 226, Section D—Quiz 5 (4 pts.)

Most graduate schools of business require applicants for admission to take the Graduate Management Admission Council's GMAT examination. Total scores on the GMAT for more than 500,000 people who took the exam between April 1997 and March 2000 are roughly Normally distributed with mean  $\mu = 527$  and standard deviation  $\sigma = 112$ . Answer the following two questions by first drawing the Normal density curve and shading the area under the curve corresponding to each situation.

- 1.5 (i) How high a GMAT score is needed to be in the highest 1%?

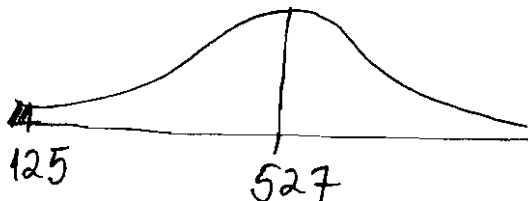
$N(527, 112)$



From Table A, find the percentage close to 99% and get the  $z$ -score = 2.33

Then do the backwards calculation:  $X = 2.33 \times 112 + 527 = 787.96$   
One would need a GMAT score higher than 788 to be in top 1%

- 1.5 (ii) What percent of the test takers have scores above 125?



$$z\text{-score for } 125 \text{ is: } \frac{125 - 527}{112} = -3.59$$

Since this  $z$ -score is smaller than the smallest value in Table A, we can safely assume area in the tail is about 0%. Thus virtually 100% of the test takers have scores above 125.