Key 2

MA 381 Probability with Statistical Applications, Exam II

There are 7 problems on this exam worth a total of 48 points; point values are provided. Partial credit will be given for some problems; show your work.

1: A certain standardized test is normally distributed with mean 1000 and standard deviation 100. Do the following:

i. (4 pts.) Compute (give me a number for) the probability that a randomly selected students scores less than 1200.

ii. (4 pts.) Compute (give me a number for) the lowest score a student can get and still be in the top 10%.

i. $P(\text{score} \le 1200) = P\left(Z \le \frac{1200-1000}{100}\right)$

$= \Phi(2)$

$= .9772$

ii. $P(\text{score} \le x) = .9$

$P\left(Z \le \frac{x-1000}{100} = .9\right)$ } 1

$z_{.9} = \frac{x-1000}{100} = 1.28$ (1 / 1)

$x = 1000 + 1.28(100) = 1128$ (1)