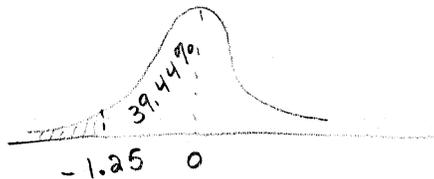# Math 206 - Quiz 6

March 10, 2010

Name ___key___

Score _____

Show all work. Supply explanations when necessary.

1. (1 point) Scores on a chemistry test are normally distributed with mean 65 and standard deviation 12. What percent of scores are below 50?

$$Z = \frac{50-65}{12} = \frac{-15}{12} = -1.25$$
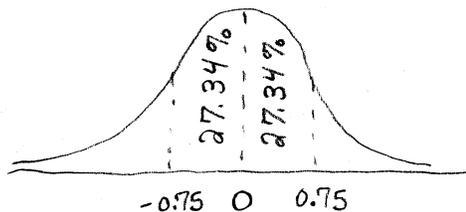
$$Z = 1.25 \rightarrow 39.44\%$$

$$50\% - 39.44\%$$
$$= \boxed{10.56\%}$$

2. (2 points) Suppose the test scores of 600 students are normally distributed with mean 76 and standard deviation 8. About how many students scored between 70 and 82?

$$Z_{70} = \frac{70-76}{8} = -0.75 \rightarrow 27.34\%$$

$$Z_{82} = \frac{82-76}{8} = 0.75 \rightarrow 27.34\%$$
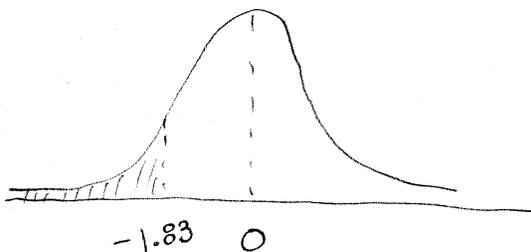
$$\Big\} \quad 54.68\%$$

$$54.68\% \text{ of } 600 = 328.08$$

$$\boxed{About \ 328 \ students}$$

3. (2 points) Heights of college students are normally distributed with mean 175 cm and standard deviation 6 cm. In a sample of 1500 college students, about how many are shorter than 164 cm?

$$Z = \frac{164-175}{6} = -1.8\overline{3} \approx -1.83 \rightarrow 46.64\%$$

$$50\% - 46.64\% = 3.36\%$$

$$3.36\% \text{ of } 1500 = 50.4$$

$$\boxed{About \ 50 \ students}$$