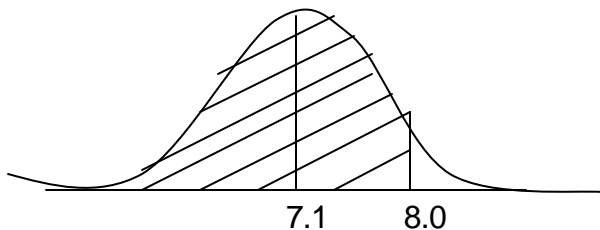


An example similar to the examples and homework exercises in Sect. 6-3.  
This shows what I would expect to see on your test.

Replacement times for CD players are normally distributed with a mean of 7.1 years and a standard deviation of 1.4 years.

- a. Find the probability that a randomly selected CD player will have a replacement time less than 8.0 years.



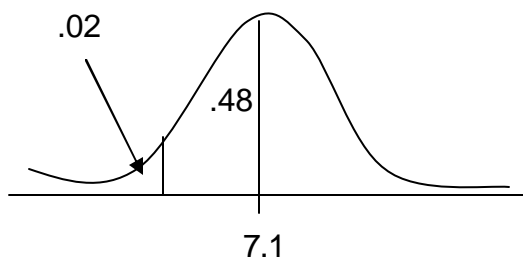
$$z = \frac{x - \mu}{\sigma} = \frac{8.0 - 7.1}{1.4} = .64$$

From Table A-2,  $p = .7389$

If you prefer using a TI-83,  $\text{normalcdf}(-999, 8.0, 7.1, 1.4) = .7398$   
which gives a slightly different answer.

The probability that a randomly selected CD player has a replacement time less than 8 years is .7389. Or 73.89% of the CD players have replacement times less than 8 years.

- b. If you want to provide a warranty so that only 2% of the CD players will be replaced before the warranty expires, what is the time length of the warranty?



Using Table A-2, look up .02 in the body of the table. It isn't there. The closest area (probability) is .0202. The z score that corresponds is -2.05.

$$\text{So, } x = \mu + z \cdot \sigma = 7.1 - 2.05(1.4) = 4.2$$

If you prefer using a TI-83,  $\text{invNorm}(.02, 8.0, 1.4) = 4.2$

We would provide a 4.2 year warranty for the CD players so that only 2% of them need to be replaced before the warranty expires.