Find z for the top 1%: p-value=.01, RT = 2.327
http://www.statdistributions.com/normal?p=0.01&tail=2

Fina z for Q1 (Q1=25th percentile; 25% of observations are less than Q1, and 75% are greater than Q1): p-value=.25, LT = -0.675
http://www.statdistributions.com/normal?p=0.25&tail=3

Find z for Q3 (75th percentile): p-value=.75, LT = 0.675
http://www.statdistributions.com/normal?p=0.75&tail=3

A specialty food company sells gourmet hams by mail order. The hams vary in size from 4.15 to 7.45 pounds, with a mean weight of 6 lbs. and standard deviation of 0.65 lbs. The weights of hams are approximately normal.

$$X \sim N(\mu, \sigma) ==> X \sim N(6, 0.65)$$

$$z = \frac{X - \mu}{\sigma}$$

Where X is observation of interest, μ is mean of the distribution, and σ is the standard deviation of the distribution

Find the following:

1. Weight of a ham is more than 6 lbs. $P(X > 6) = P\left(Z > \frac{6-6}{0.65}\right) = P(Z > 0) = 0.5 = 50\%$
   http://www.statdistributions.com/normal?z=0&tail=2
2. Weight of a ham is less than 5 lbs $P(X < 5) = P\left(Z < \frac{5-6}{0.65}\right) = -1.54$: z=-1.54,LT = 0.062=6.2%
   http://www.statdistributions.com/normal?z=-1.54&tail=3
3. Weight of a ham more than 7.45 lbs $P(X > 7.45) = P\left(Z > \frac{7.45-6}{0.65}\right) = P(Z > 2.23) = 0.013 = 1.3\%$ z=2.23,RT
   http://www.statdistributions.com/normal?z=2.23&tail=2
4. Weight between 4.15 and 6 lbs. $P(4.15 < X < 6) = P\left(\frac{4.15-6}{0.65} < Z < \frac{6-6}{0.65}\right) = P(Z < 0) - P(Z < -2.85) =$ z=0,LT and z=-2.85 LT $= 0.5 - 0.002 = 0.498 = 49.8\%$
   http://www.statdistributions.com/normal?z=0&tail=3
   http://www.statdistributions.com/normal?z=-2.85&tail=3
5. Heaviest 8% of hams (find the z score, solve for X in $z = \frac{X-\mu}{\sigma}$ ➔ $X = z\sigma + \mu$ p-value=.08, RT
   http://www.statdistributions.com/normal?p=0.08&tail=2
   $z = 1.405$ ➔ $X = 1.405(0.65) + 6 = 6.91\ lbs$

   OR: p-value=.08, mean=6, stdev=.65, RT = 6.91 lbs
   http://www.statdistributions.com/normal?p=0.08&mean=6&sd=0.65&tail=2