



4. The scoring of modern IQ is such that Intelligence Quotients (IQs) have a normal distribution of  $\mu = 100$  and  $\sigma = 15$ .

Mensa International is a non-profit organization that accepts only people with IQ score within the top 2%. What level of IQ qualifies one to be a member of Mensa?

5. What is the z-score value that corresponds to the 30th percentile?

6. In a weightlifting competition, the amount that the competitors can lift is normally distributed with  $\mu = 196$  kg and  $\sigma = 11$  kg. Only the top 10% of all competitors will be able to advance to the next phase of the competition. What amount must a competitor lift in order to move into the next phase of the competition?