For problems 1 through 3 let $z$ be distributed as a standard normal variable:

1) What is the $z$-score that marks the 65th percentile of the standard normal distribution?

2) What is the $z$-score that marks the top 8% of the standard normal distribution?

3) Find a value ‘$a$’ such that $P(z > a) = 0.8238$?

Use the information in the following setting to answer questions 4 and 5:

In an early anthropological study investigating the differences in brain weights of various races and nationalities Ramond Pearl reported that, on average, the mass of a brain from a male Swede was 1400 grams and the corresponding standard deviation was 75 grams. Let's assume that the distribution of this variable is normal.

[Adapted from: Pearl,R.(1905),Biometrical Studies on Man I. Variation and correlation in Brain Weight, Biometrika, 4, pp. 13-104]

4) What is the brain mass that marks the 5th percentile?

5) What brain mass separates the top 25% from the rest?