6. The weights of newborn babies are normally distributed with mean 3200 grams and standard deviation 200 grams.

(a) Find, using standardisation, the probability that a randomly selected newborn baby has a weight greater than 3500 grams.

(2)

A newborn baby whose weight is greater than 3500 grams is classified as high.

A newborn baby is chosen at random.

Given that it is classified as high,

(b) find, using standardisation, the probability that this newborn baby has a weight greater than 3600 grams.

(4)

Given that 75.6% of newborn babies classified as high have a weight greater than w grams,

(c) find, using standardisation, the value of w

(4)

(Total for Question 6 is 10 marks)