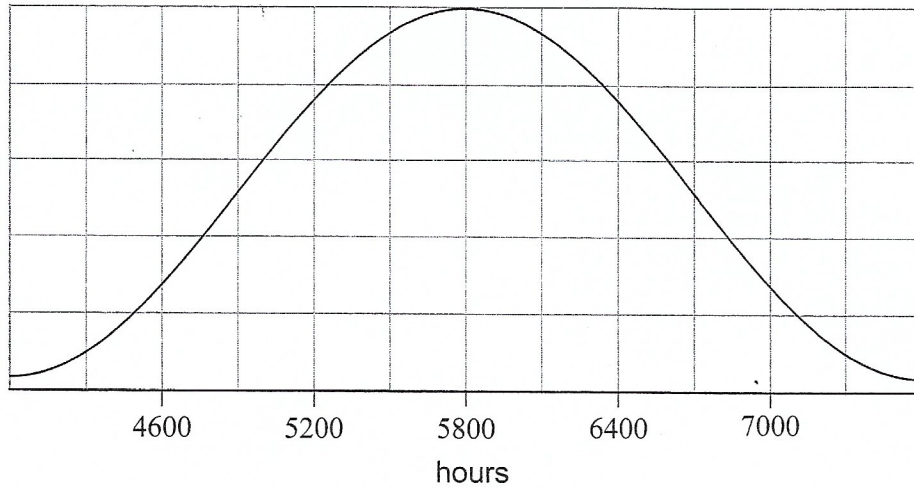


Normal 1

8. The lifetime, L , of light bulbs made by a company follows a normal distribution. L is measured in hours. The normal distribution curve of L is shown below.



- (a) Write down the mean lifetime of the light bulbs. [1]

The standard deviation of the lifetime of the light bulbs is 850 hours.

- (b) Find the probability that $5000 \leq L \leq 6000$, for a randomly chosen light bulb. [2]

The company states that 90% of the light bulbs have a lifetime of at least k hours.

- (c) Find the value of k . Give your answer correct to the nearest hundred. [3]

Working:

Answers:

- (a)
(b)
(c)

13. The weight, W , of bags of rice follows a normal distribution with mean 1000 g and standard deviation 4 g.

(a) Find the probability that a bag of rice chosen at random weighs between 990 g and 1004 g. [2]

95% of the bags of rice weigh less than k grams.

(b) Find the value of k . [2]

For a bag of rice chosen at random, $P(1000 - a < W < 1000 + a) = 0.9$.

(c) Find the value of a . [2]

Working:

Answers:

- (a)
- (b)
- (c)