

Farmer Jones grows apples. The weights, in grams, of the apples grown this year are normally distributed with mean 170 and standard deviation 25. Apples that weigh between 142 grams and 205 grams are sold to a supermarket.

- (a) Find the probability that a randomly chosen apple grown by Farmer Jones this year is sold to the supermarket. [4]

This image shows a full page of white paper with horizontal dashed lines, typical of primary school writing paper. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Farmer Jones sells the apples to the supermarket at \$0.24 each. He sells apples that weigh more than 205 grams to a local shop at \$0.30 each. He does not sell apples that weigh less than 142 grams.

The total number of apples grown by Farmer Jones this year is 20 000.

- (b) Calculate an estimate for his total income from this year's apples. [3]

[illegible]

Farmer Tan also grows apples. The weights, in grams, of the apples grown this year follow the distribution  $N(182, 20^2)$ . 72% of these apples have a weight more than  $w$  grams.

- (c) Find the value of  $w$ . [3]

[illegible]