



Oxford Cambridge and RSA

Wednesday 20 May 2020 – Morning

Level 3 Certificate Core Maths A (MEI)

H868/02 Critical Maths

Insert

Time allowed: 2 hours



INSTRUCTIONS

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INFORMATION

- This Insert contains the pre-release material that you have already seen.
- This document has **4** pages.

A: Estimating the weight of a donkey

Donkeys are used as working animals in many parts of the world. In the UK, they are sometimes kept as pets or for children to ride. In some tourist destinations, donkey rides for adults are popular.

Adult donkeys vary in size and can weigh between 100 kg and 600 kg, depending on the breed. Monitoring the weight of a donkey is useful for checking that it is healthy and to calculate how much medication it needs if it is sick. However, weighing a donkey would need specialist equipment.

A donkey's weight can be estimated by taking two measurements with a tape measure and then using Fig. A1.

The heart girth is the measurement all round the donkey, just behind its front legs. It is a bit like the chest measurement on a human being.

The height of a donkey is a vertical measurement, taken from the bottom of the front legs to the shoulder.

Fig. A1 shows that a donkey 104 cm tall, with a heart girth of 122 cm, has an estimated weight of 180 kg.

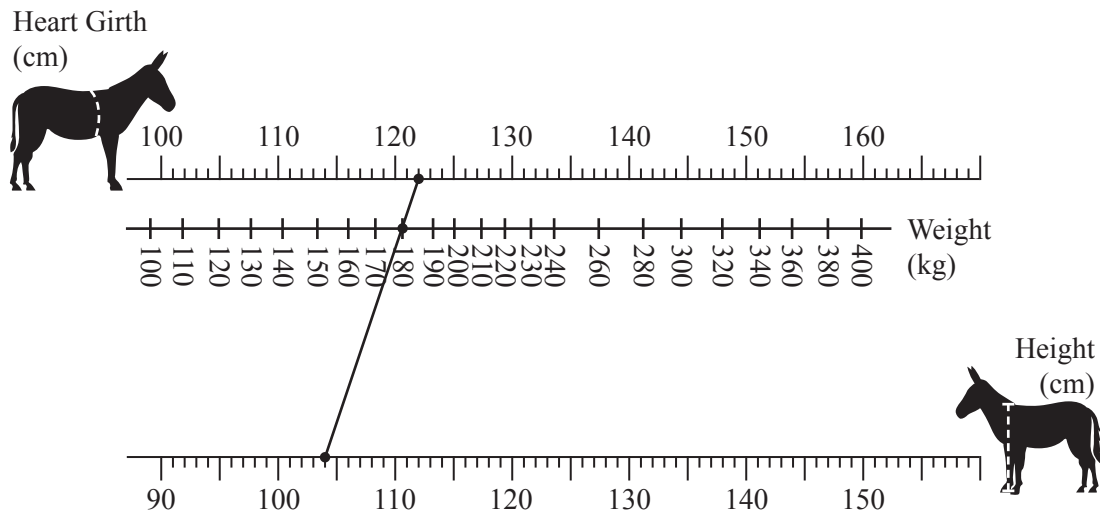


Fig. A1

B: The flu jab

Influenza, usually called flu, is often confused with a bad cold but it can be a serious illness, especially for the elderly or those with reduced immunity. Most cases of flu in the UK occur in the winter months.

Flu is caused by one of a group of viruses. It is possible to vaccinate against flu but it isn't possible to produce a vaccine that is effective against every single flu virus. Every year, experts use data to decide which will be the most common flu viruses circulating that year and produce a vaccine which will be effective against those viruses.

People aged over 64 and others who could be badly affected by the flu virus are encouraged to be vaccinated. The vaccine, commonly known as the flu jab, reduces the risk of catching flu but does not prevent all cases. This is a particular problem in years when the most common types of flu viruses do not match the ones which the vaccine was prepared to protect against.

Flu viruses mutate over time so new flu viruses develop each year. People lack immunity to these new viruses so they can spread rapidly and vaccines from previous years do not protect against new varieties of flu virus. For this reason, annual flu vaccinations are recommended for vulnerable groups of people.

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