

a Describe **three** pieces of data that would need to be collected for this model.

- 1
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- 2
.....
- 3
.....

b Give **three** reasons why modelling is carried out.

- 1
.....
- 2
.....
- 3
.....

c The diagram shows five computer modelling applications on the left and five reasons why modelling is carried out on the right. Draw lines to match each application to the best reason why it would be modelled.

Car driving simulation

Climate change simulation

Model the loading on a new bridge

Chemical reaction involving toxic chemicals

Under sea exploration

Cost of building the real thing is too expensive

Some real situations are too dangerous to humans

It takes too long to get results back from the real thing

Almost impossible to do the tasks for real

Easier and safer to make changes to a model rather than the real thing

3 Robots are used in many factories.

Indicate with a tick (✓) which of the following are disadvantages to the management of a company using robots in their factory.

Reasons	Disadvantage? (✓)
Robots have difficulty in doing 'one off' tasks	
Management can move factories anywhere in the world	
Using robots can lead to unemployment	
Robots manufacture more items per hour than humans	
All items produced using robots are identical	
The set up and maintenance of robots is expensive	

4 A customer of Hodder Bank would like to check the balance on their bank account.

The customer decides to use the local ATM and inserts their debit card into the ATM.



- a Describe the computer processing that takes place at the ATM once the customer inserts their card.

- b** During the customer's request for a current balance, the bank's computer will carry out a number of processes to enable the customer to see their balance.

Describe these processes.
