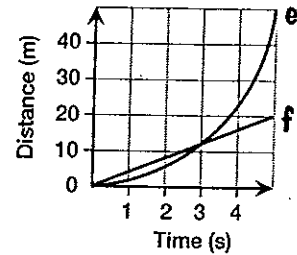
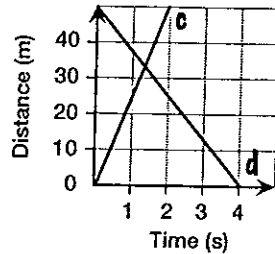
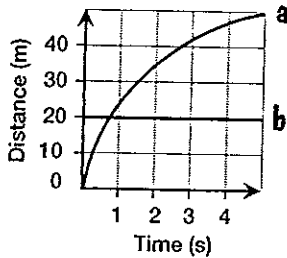


11.3 Graphs of change

On a graph, the speed at which a quantity changes is shown by the steepness (gradient) of the line or curve.

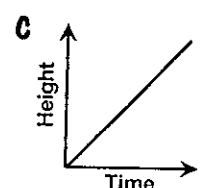
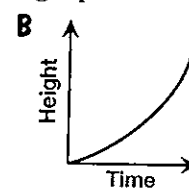
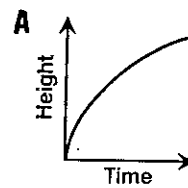
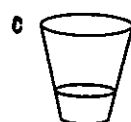
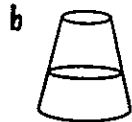
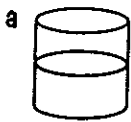
- 1 These distance graphs show the journeys of six different cars. Write a description next to each graph: *fast, slow, not moving, speeding up, slowing down, going backwards*



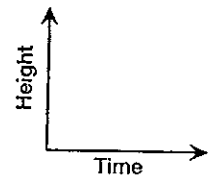
- 2 Complete using an appropriate word, for example *flat, shallow, steep*:

- a When the quantity is changing quickly, the graph is _____.
 b When the quantity is changing slowly, the graph is _____.
 c When the quantity is not changing, the graph is _____.

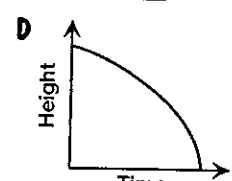
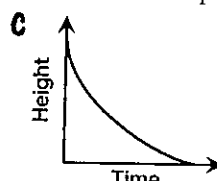
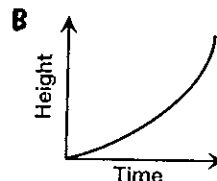
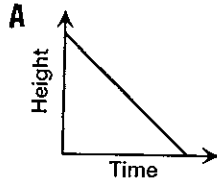
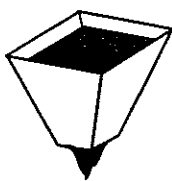
- 3 These three containers are filled with water and the height levels of the water are graphed over time. Match each container with its correct graph.



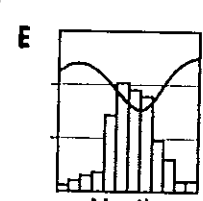
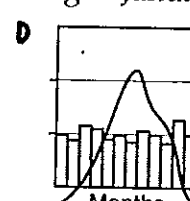
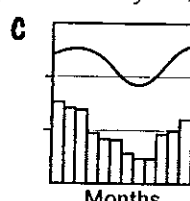
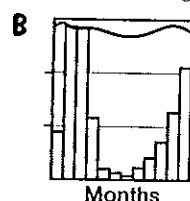
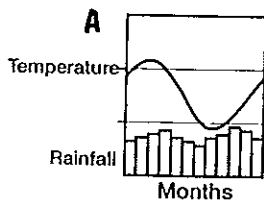
- 4 This container is narrower than the one in 3a. What does its graph look like?



- 5 Wheat is emptied from this storage bin. Which graph best shows the height of the grain in the bin as it empties?



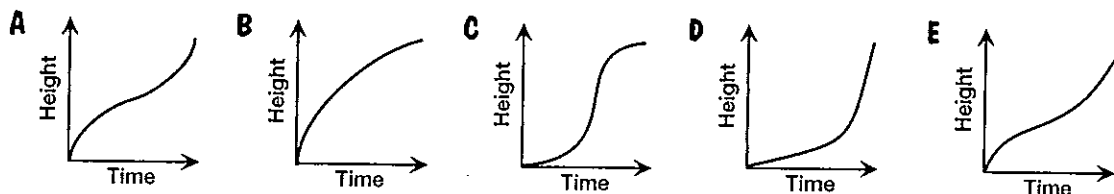
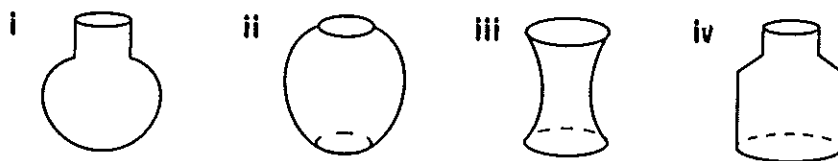
- 6 Match each city with its climatic graph for the year, starting in January.



- a Brisbane's rainfall pattern matches its temperature pattern.
 b Boston, USA, has consistent rain fall and it snows in winter.
 c Perth has cold and wet winters.
 d Darwin has consistent temperatures and virtually no rain in winter.
 e Melbourne has consistent rainfall.

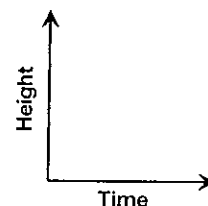
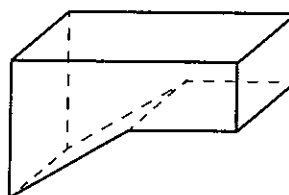
11.3 Graphs of change (continued)

7 a These four containers are filled with water. Match each one with its correct graph.

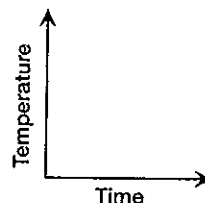


b Draw the shape of a container to go with the unmatched graph.

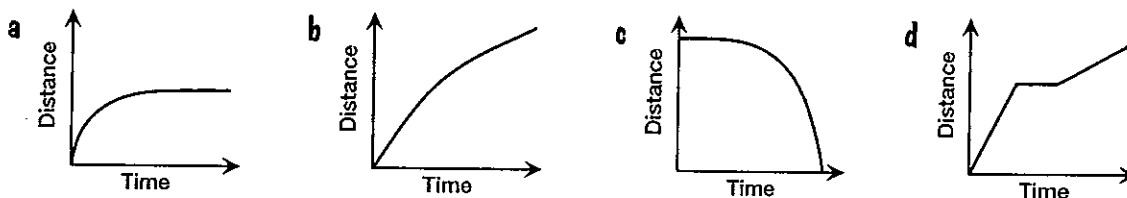
8 This empty swimming pool is filled with a hose. Describe in words the rate at which the water level would rise, and sketch a graph to illustrate this.



9 A bowl of hot soup sits on the kitchen table, cooling. At first, it loses heat quickly but as time passes it loses heat slowly. Illustrate this cooling rate on the temperature graph.



10 These distance graphs are for four different cars. Describe what each shows about the cars' speeds.



11 This graph shows Grandpa Bob's heart rate during the day. Use the letters on the graph to explain how it illustrates this story:

'After a half-hour nap, Grandpa Bob read his paper over lunch. He then walked down the street to visit his buddy Grandpa Klaas, climbing two flights of stairs to reach his apartment. Over a cup of tea, they talked about old times before watching their favourite soccer team on TV win the FA cup. Afterwards, Grandpa Bob walked home happily.'

