CHAPTER 9
ASSESSMENT

Calculating Rate of Change

Goal • Practise solving problems involving rates of change.

What to Do

Answer each question in the space provided.

1. Complete the table below.

t_i	t_f	Δt	Initial state	Final state	Total change	Average rate of change
3.0 s	17.0 s		10.0 m	28.0 m		
0 min	15 min		–10°C	100°C		
1.0 h	9.0 h		1200 kg	350 kg		
35 min	155 min		102 L	12 L		

2. Solve the following problems.

(a) A car is travelling along a straight road. The car is 12.4 km from home at 10:20 a.m. It is 74.8 km from home at 11:50 a.m. How fast is the distance changing?
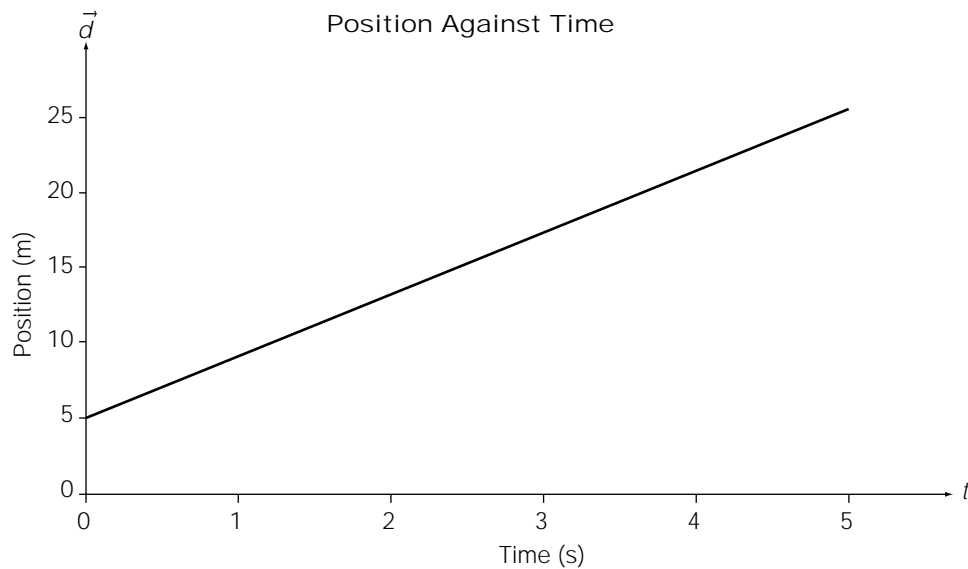
(b) A water tank has a volume of 800 L. It develops a leak 23 s after being filled. Later, 327 s after being filled, the volume of the water in the tank is 613 L. How fast is the volume of the water changing?

(c) A container of pop is taken out of a refrigerator and placed on a counter. After 30.0 min, the rate of change of temperature for the pop was found to be 0.7°C/min. If the pop had a temperature of 5°C in the refrigerator, find its final temperature.

3. Find the rate of change for each graph by drawing a slope triangle and calculating the slope.

(a)

Position Against Time

(b)

Volume of Water Against Time