

# Calculating Time Intervals and Displacements

**Goal** • Practise calculating change in time and displacement.

## What to Do

Answer each question in the space provided.

1. Complete each table below.

(a)

$t_i$	$t_f$	$\Delta t$
1.0 s	5.0 s	
4.56 s	19.71 s	
0 h	3.5 h	
	14.0 s	9.0 s
3 min		5 min

(b)

$\vec{d}_i$	$\vec{d}_f$	$\Delta \vec{d}$
+3.4 m	+7.8 m	
+14.7 m	+3.1 m	
+12.0 km	+15.7 km	
+13.1 m		+102.3 m
	+14.8 cm	+9.1 cm

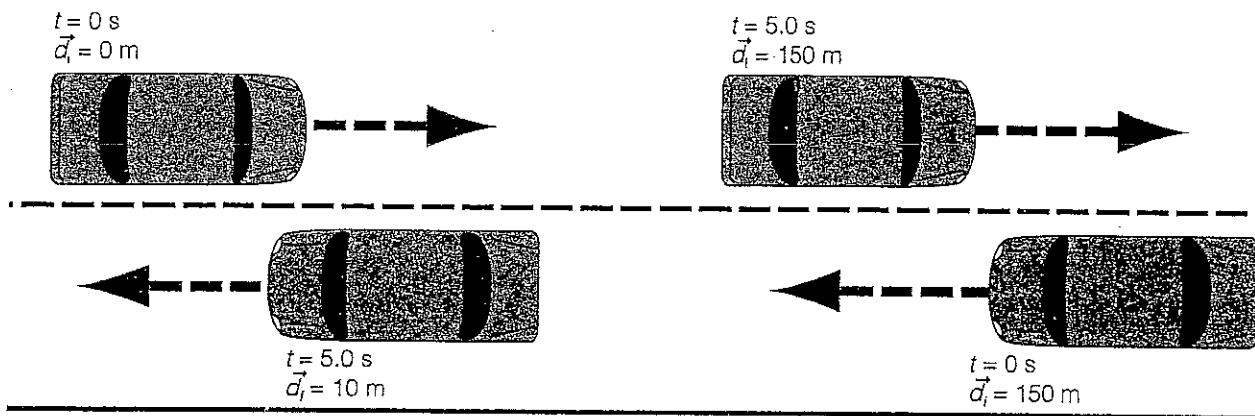
2. Solve the following problems.

(a) A runner is moving along a straight road. At a time of 0.62 s, the runner's position is +10.6 m. Later, at a time of 9.93 s, the runner's position is +73.9 m. Find the time interval and displacement for the runner.

(b) A person is driving a car along a straight highway. The car's position at 9:00 a.m. is 13 km from home. Its position at 10:30 a.m. is 137 km from home. Find the time interval and displacement for this section of the journey.

## Calculating Time Intervals and Displacements (continued)

3. The diagram below shows two cars passing each other on opposite sides of a road.



(a) Complete the following table for both cars.

Car	$t_i$	$t_f$	$\Delta t$	$\vec{d}_i$	$\vec{d}_f$	$\Delta \vec{d}$	Direction (left or right)
1							
2							

(b) Why is the displacement negative for car 2 and positive for car 1?

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