DATE: NAME: CLASS:

CHAPTER 10 REINFORCEMENT

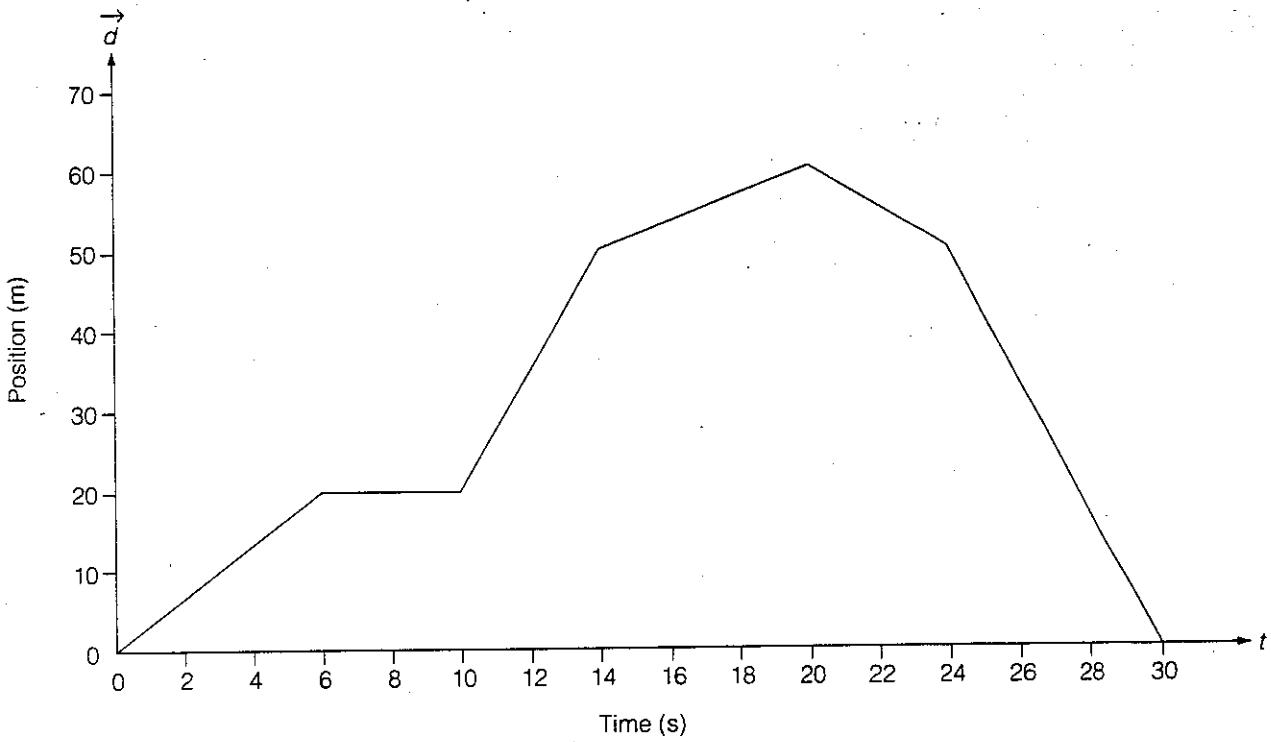
BLM 10-6

# Velocity from Position-Time Graphs

**Goal** • Find velocities from different sections of a position-time graph.

## What to Do

Examine the position-time graph below. Then answer the questions that follow.




1. Complete the following table to calculate the velocity for each time interval.

| Time (s) | $\Delta t$ (s) | $\Delta \vec{d}$ (m) | $\vec{v}$ (m/s) | Direction of motion (right or left) |
|---|---|---|---|---|
| 0 to 6 | 6 | +20 | $+3.\overline{3}$ | R |
| 6 to 10 | 4 | 0 | 0 | — |
| 10 to 14 | 4 | +30 | +7.5 | R |
| 14 to 20 | 6 | +10 | $+1.\overline{6}$ | R |
| 20 to 24 | 4 | −10 | −2.5 | L |
| 24 to 30 | 6 | −50 | $-8.\overline{3}$ | L |

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# Velocity from Position-Time Graphs (continued)

2. Find the average velocity for each time interval in the table below.

| Time (s) | $\Delta t$ (s) | $\Delta \vec{d}$ (m) | $\vec{v}_{av}$ (m/s) |
|---|---|---|---|
| 3 to 24 | 21 | +40 | +1.9 |
| 10 to 26 | 16 | +13 | +0.8 |
| 14 to 30 | 16 | −50 | −3.1 |

3. Explain how you can tell when the object is at rest, from

(a) the graph

STRAIGHT HORIZONTAL LINE

(b) the table

DISP. = 0

4. Explain how you can tell when the object is moving away from its initial position, from

(a) the graph

+ve SLOPE

(b) the table

DISP. IS +ve

5. Explain how you can tell when the object is moving back, toward its initial position, from

(a) the graph

−ve SLOPE

(b) the table

DISP. IS −ve

 