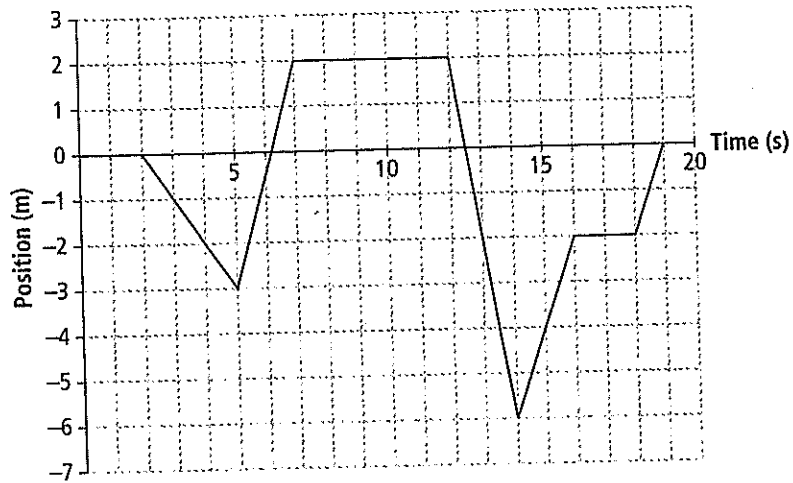


Use with textbook pages 364-367.

Analyzing position-time graphs

1. Use the following position versus time graph showing a girl's movement up and down the aisle of a store to answer the questions below. The origin is at one end of the aisle.



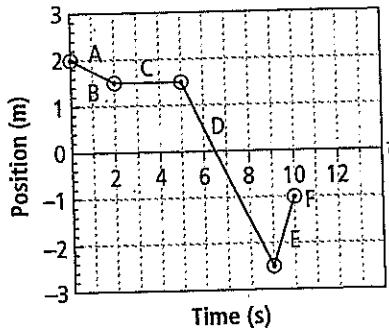
a) Complete the following table. Determine how far the girl travelled during each time interval and calculate the average velocity for each section of the graph.

Time Interval	Displacement	Average Velocity
0 s-2 s 2 s	0 m	$\frac{0}{2} = 0 \text{ m/s}$
2 s-5 s 3 s	-3 m	$\frac{-3 \text{ m}}{3 \text{ s}} = -1 \text{ m/s}$
5 s-7 s 2 s	5 m	$\frac{5 \text{ m}}{2 \text{ s}} = 2.5 \text{ m/s}$
7 s-12 s 5 s	0 m	0 m/s
12 s-14 s 2 s	-8 m	$\frac{-8}{2} = -4 \text{ m/s}$
14 s-16 s 2 s	4 m	$\frac{4}{2} = 2 \text{ m/s}$
16 s-18 s 2 s	0 m	0 m/s
18 s-19 s 1 s	2 m	$\frac{2}{1} = 2 \text{ m/s}$
19 s-20 s 1 s	0 m	0 m/s

b) When does the girl have a position of -6 m? 14 s

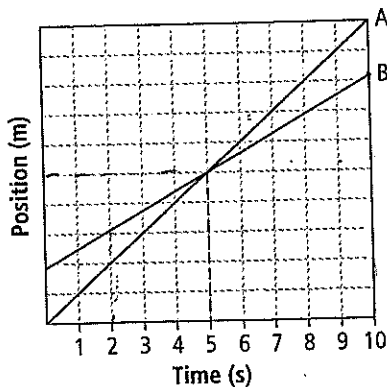
c) What is the girl's total displacement after 20 seconds? 0 m

2. Use the following position-time graph, showing the motion of a gymnast on a balance beam, to Match each **Descriptor** below with the corresponding part of the **Graph** shown above. Each part of the Graph may be used as often as necessary. Assume the centre of the the balance beam is the reference point (origin).



- C a) She stands still for 3 s.
- E b) She moves even faster to the right for 1 s.
- B c) She moves very slowly to the left for 2 s.
- D d) She moves more quickly to the left for 4 s.
- F e) She ends up 1 m left of the centre of the balance beam.
- A f) She starts 2 m to the right of the centre of the balance beam.

3. Use the following position-time graph, showing the motion of two runners, to answer the questions below.



- a) What does the y-intercept represent? Le point de départ
- b) Do the runners start at the same place? non
- c) At about 2 s, which runner is running faster? How can you tell?
A - plus grande pente
- d) What occurs at 5 s? Ils sont à la même place. "A" passe "B"
- e) At 10 s, which runner is ahead? A

Name _____

Date _____

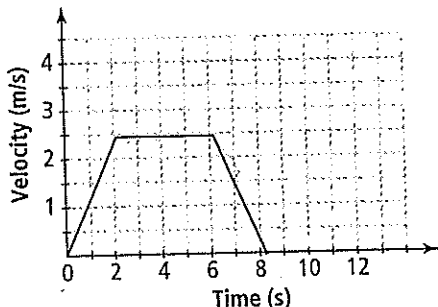
Use with textbook pages 394-396.

Analyzing velocity-time graphs

1. What is the meaning of each of the following features of a velocity-time graph?

- (a) the slope of the line acceleration
- (b) a line above the x-axis vitesse dans la direction positive
- (c) a line below the x-axis vitesse dans la direction negative
- (d) a line with a positive slope acceleration
- (e) a line with a negative slope deceleration
- (f) a horizontal section of the graph vitesse constant (acceleration = 0)
- (g) a point where the line crosses the x-axis la motion arrete

Use the following velocity-time graph representing the motion of a ball moving to the right on a table to answer questions 2 and 3.



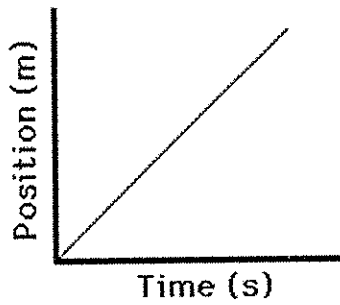
2. Complete the following table. Describe the slope, acceleration, and velocity of the ball (e.g. positive, negative, or zero).

MOTION OF A BALL			
Time Interval	Slope	Acceleration	Velocity
0 s - 2 s	positive	+	+
2 s - 6 s	0	0	+
6 s - 8 s	negative	-	+
8 s - 12 s	0	0	0

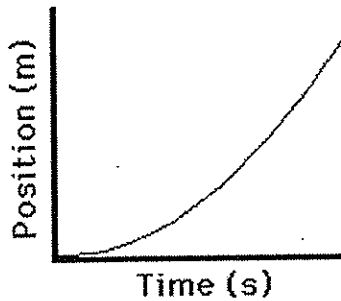
3. Describe the motion of the ball at each time interval.

- (a) 0 s - 2 s la balle accelere -> plus en plus vite : a = 1,25 m/s²
- (b) 2 s - 6 s la balle a une vitesse constant (positive = 2,5 m/s)
- (c) 6 s - 8 s la balle decelere -> ralenti
- (d) 8 s - 12 s la balle est arrete.

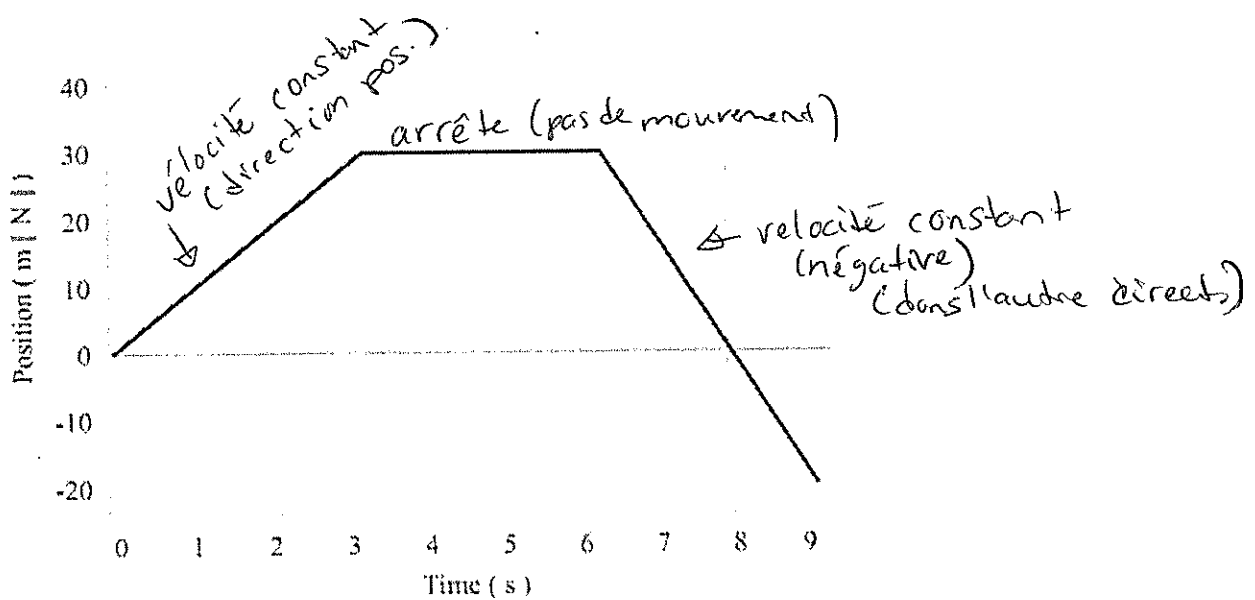
Expliquez ce qui arrive dans chaque graphique position/temps



- vitesse constant
- mouvement rectiligne uniforme

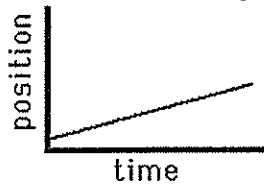


- acceleration
- l'objet va de plus en plus vite.

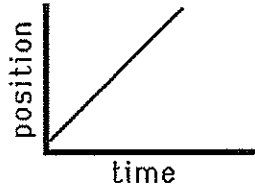


Comparez les graphiques position/temps

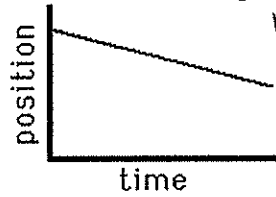
a)



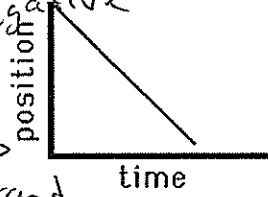
Les deux montrent le mouvement rectiligne uniforme dans la direction positive.
la vitesse est plus vite →



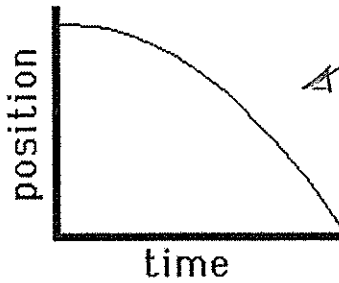
b)



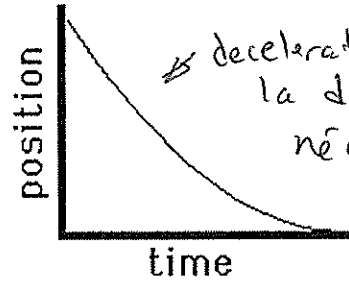
Les 2 montrent le mouvement rectiligne uniforme dans la direction négative.
la vitesse est plus grande →



c)



→ décelération dans la direction négative



→ décelération dans la direction négative

Expliquez ce qui arrive dans chaque graphique vitesse moyenne/temps.

