

- 2 A sky-diver jumps from a high-altitude balloon. The variation with time t of the vertical acceleration a of the sky-diver is shown in Fig. 2.1.

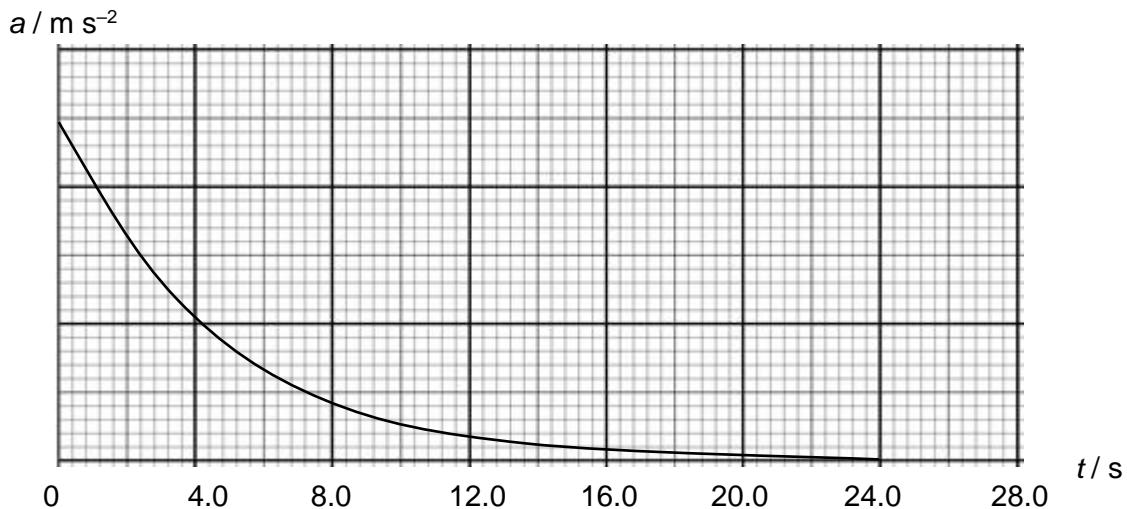


Fig. 2.1

- (a) Explain why the acceleration of the sky-diver decreases with time.

.....
.....
.....

[2]

- (b) State and explain whether the acceleration at the start of the jump is greater than, equals to, or less than 9.81 m s^{-2} .

.....
.....
.....

[2]

- (c) Explain how you will use Fig. 2.1 to determine the terminal velocity of the sky-diver.

.....
.....

[1]

- (d) Sketch the graph of variation with time t of the displacement of the sky-diver on Fig. 2.2.

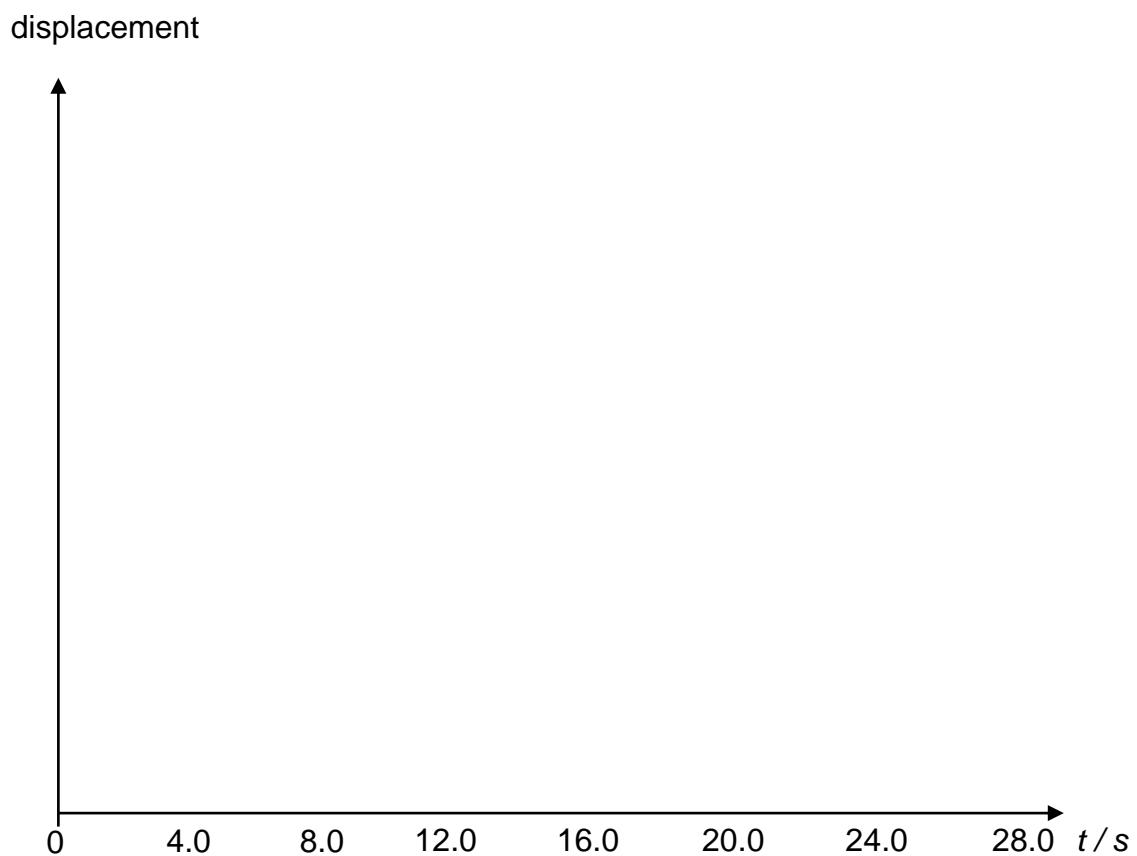


Fig. 2.2

[2]

[Total: 7]