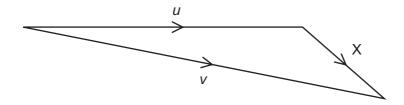
- **6** What gives the value of a body's acceleration?
  - A the area under its displacement-time graph
  - B the area under its velocity-time graph
  - **C** the gradient of its displacement-time graph
  - **D** the gradient of its velocity-time graph
- An object has an initial velocity *u*. It is subjected to a constant force *F* for *t* seconds, causing a constant acceleration *a*. The force is **not** in the same direction as the initial velocity.

A vector diagram is drawn to find the final velocity *v*.



What is the length of side X of the vector diagram?

- A F
- B Ft
- C at
- **D** u + at
- **8** A stone is dropped from the top of a tower of height 40 m. The stone falls from rest and air resistance is negligible.

What time is taken for the stone to fall the last 10 m to the ground?

- **A** 0.38 s
- **B** 1.4 s
- **C** 2.5 s
- **D** 2.9s

- **9** What is meant by the weight of an object?
  - **A** the gravitational field acting on the object
  - **B** the gravitational force acting on the object
  - **C** the mass of the object multiplied by gravity
  - **D** the object's mass multiplied by its acceleration