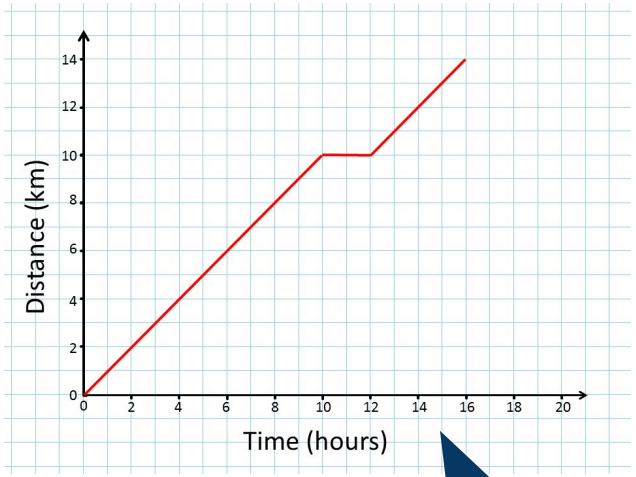
Distance/Time Graphs

Ms. Dilworth's 5th Grade

DISTANCE-TIME GRAPHS

- A **distance-time graph** shows an object's motion

Y-axis



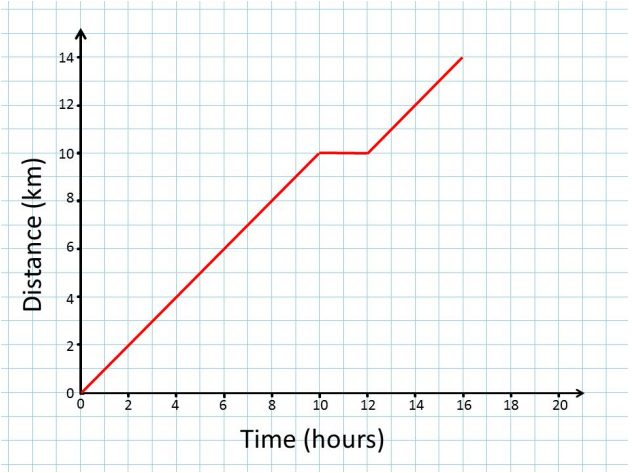
X-axis

It shows how long it takes an object to travel a certain distance!

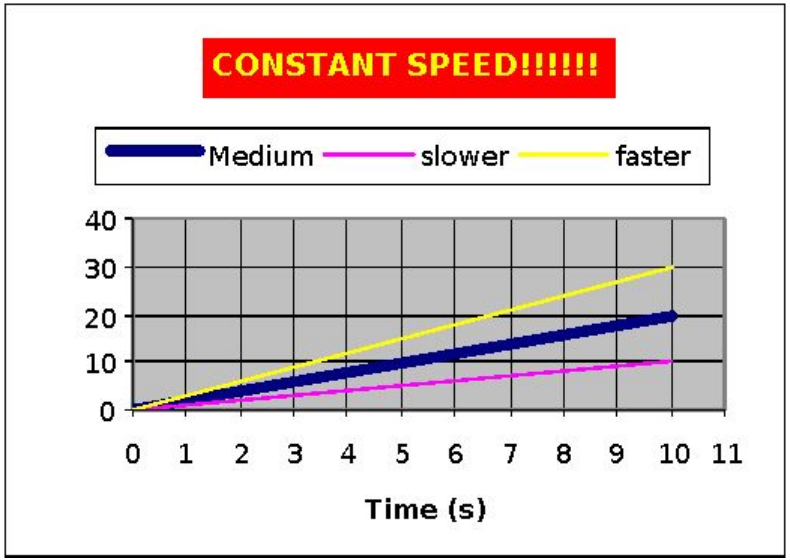
DISTANCE-TIME GRAPHS

What can you calculate using distance and time?

SPEED!

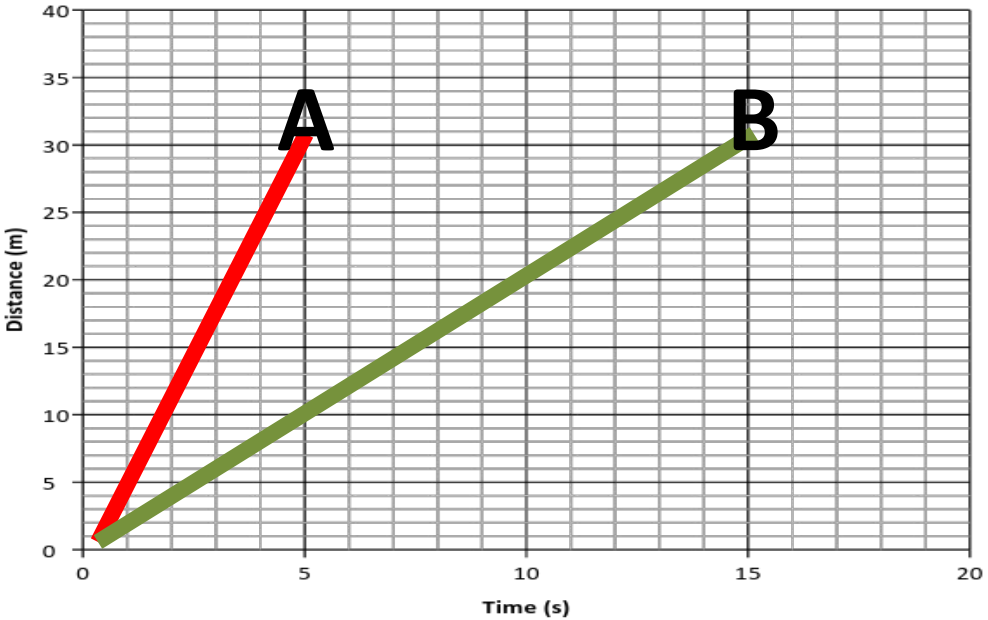


DISTANCE-TIME GRAPHS



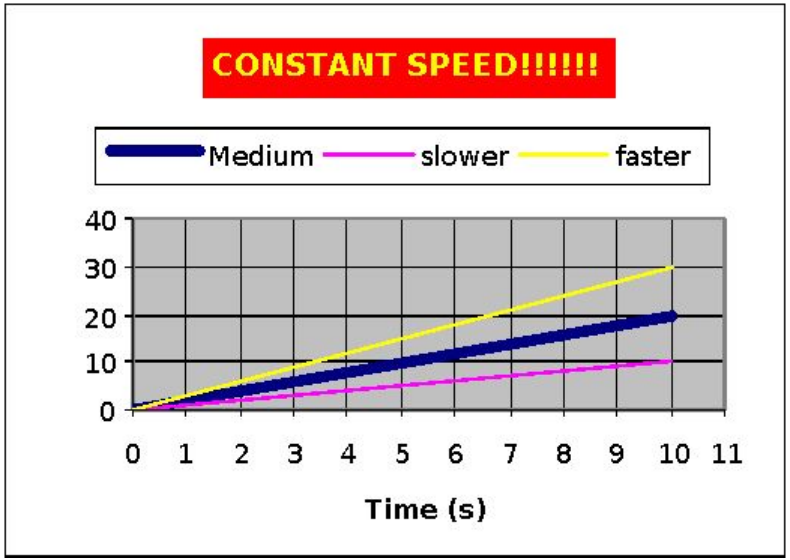
- A **straight line** shows an object moving at a **constant** speed
- The **steeper** the line, the **faster** the object is moving

Which object is faster?



DISTANCE-TIME GRAPHS

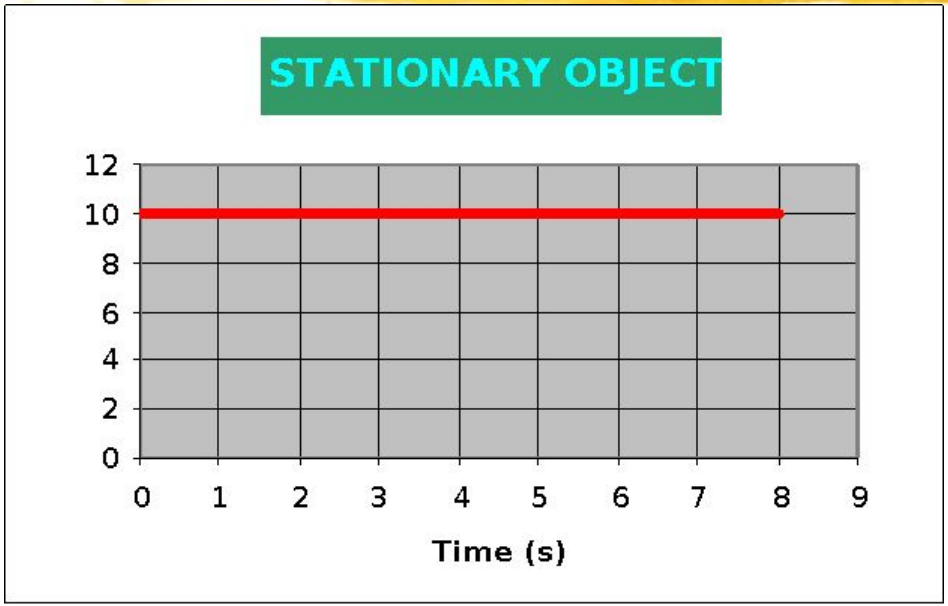
Work out the speed for each object shown in the graph!



Remember:

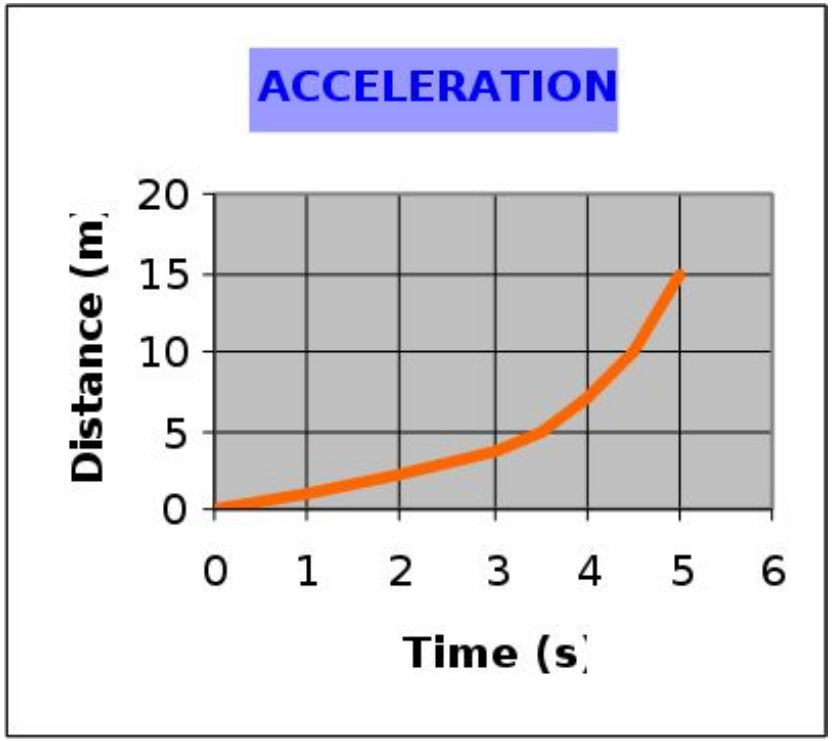
speed = distance ÷ time

STATIONARY OBJECTS!



- A flat, **horizontal** line shows a **stationary object**
- This means the object is NOT moving.
- Time keeps moving, distance stays the same

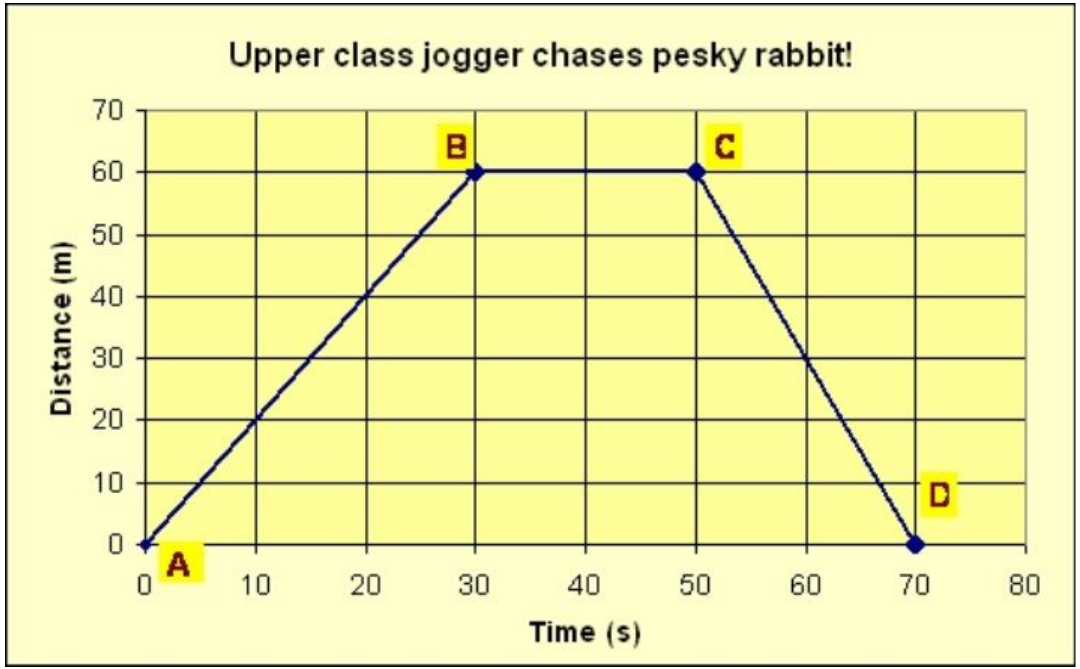
ACCELERATING OBJECTS



- **Curved** lines show if an object is accelerating or **decelerating**!
- The **steeper** the line gets the **faster** the object is moving!

Changing Direction

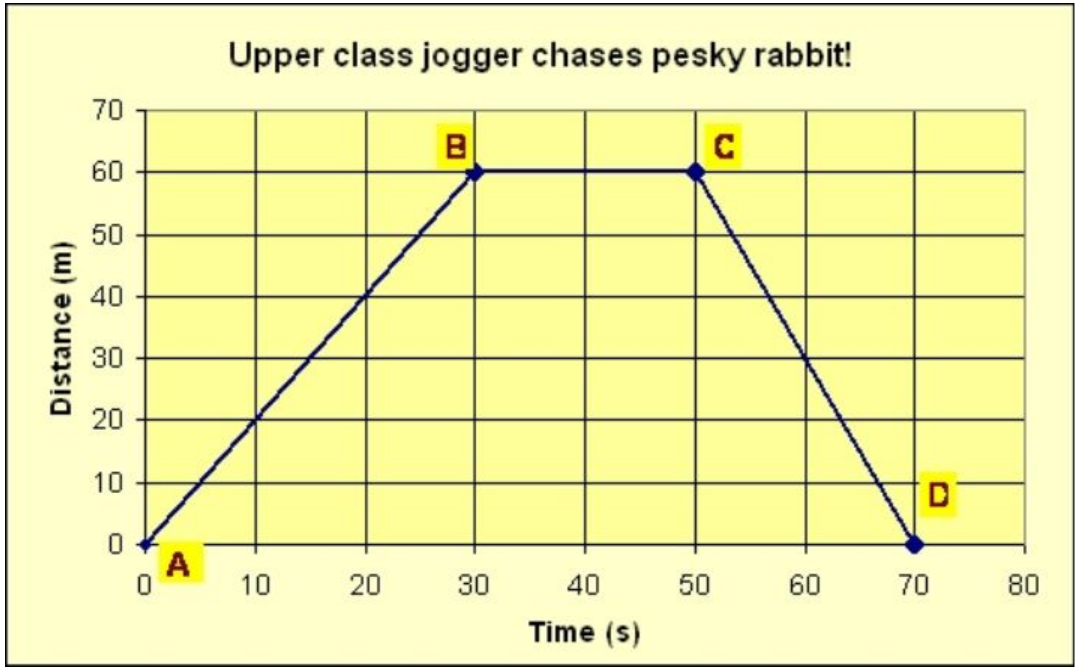
What is happening between C and D?



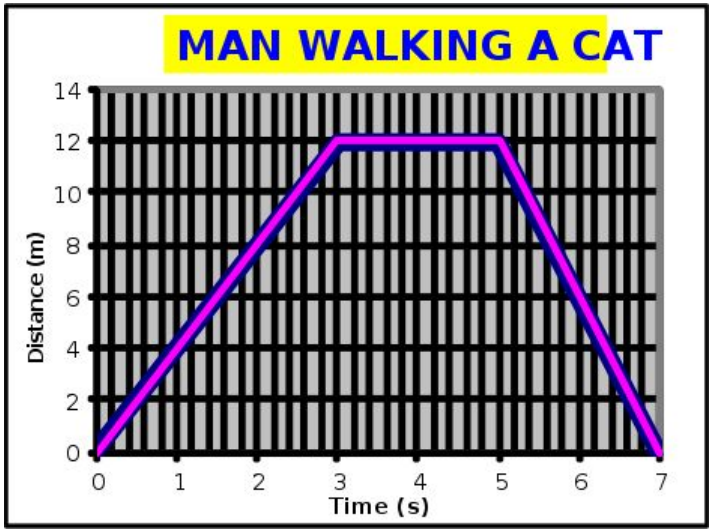
The line is sloping DOWN.
This means that the objects **changed direction** and it is heading back to the starting point.

A JOGGING GRAPH!

Describe the **motion** of the jogger in each section of the graph!



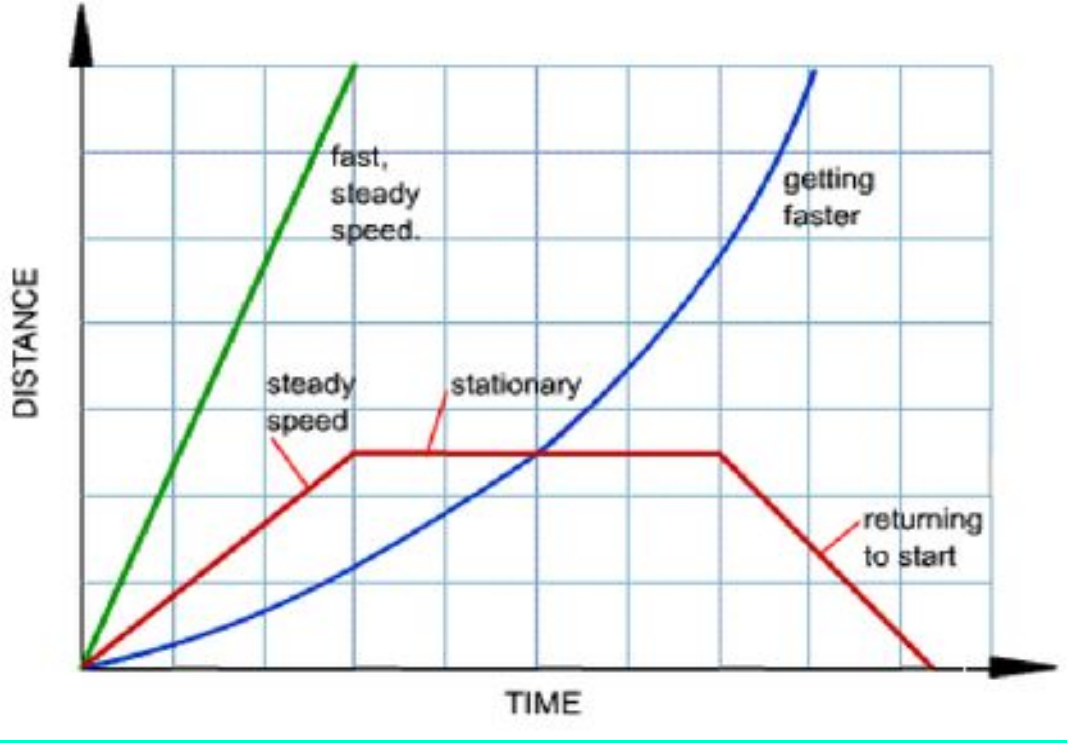
GRAPH QUESTIONS



- 1. What is the **speed** of the man during the first **three** seconds?
- 2. What is the man doing **between 3 and 5** seconds?
- 3. Calculate the **speed** of the man between 5 and 7 seconds.
- 4. What is the **total distance** that he has moved?

Distance-Time Extras

- Draw a distance-time graph showing your journey to school.
- Try to include different gradients to show different speeds. Remember – steep slope is fast, gentle slope slow!!



- **STRAIGHT LINE** = CONSTANT SPEED
  - *THE STEEPER THE LINE, THE FASTER THE MOTION!!!*
- **FLAT LINE** = STOPPED/STATIONARY/NOT MOVING
- **CURVED LINE** = ACCELERATING/CHANGING SPEED
- **SLOPED DOWN**=GOING BACK TO START (CHANGING DIRECTION)