Key

16

1. Linear C
2. Responsive variable F
3. Independent variable E
4. Dependent variable A
5. Slope D
6. Manipulated variable B

A. Vertical axis (y) variable.
B. The variable you change.
C. Any straight line graph.
D. Measure of how steep a line is.
E. The variable on the horizontal axis (x-axis).
F. What changes because you change something.

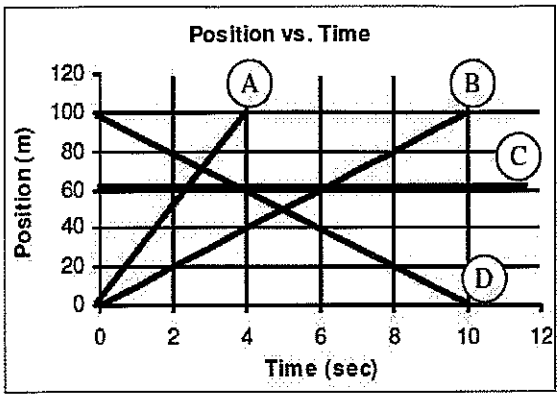
Circle the Independent Variable

A. (Time) or Acceleration
B. Velocity or (Time)
C. (Time) or Position

Time cannot be changed

Circle the Manipulated Variable for these Graphs

A. (Force on an object) or Acceleration of the object?
B. Period of a Spring or (Mass hung from the spring)?
C. (Number of batteries) or Brightness of a bulb?



What does the slope of this line show? Speed

How much time does it take Object A to travel 100m? 4sec

How much time does it take Object B to travel 100m? 10sec

Which Object (A or B) has the faster velocity? A

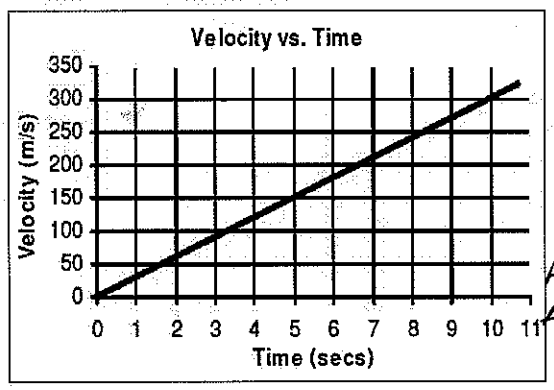
Object C starts where? 60m Object C ends where? 60m

Which line shows negative speed? D

Which line shows positive speed? A, B

Which line shows an object at rest? C

What is Object D's initial position? 100m



When was the object moving at 150 m/s? 5sec

How fast is the object going after 10 seconds? 300m/s

What was the initial velocity of the object? 0m/s

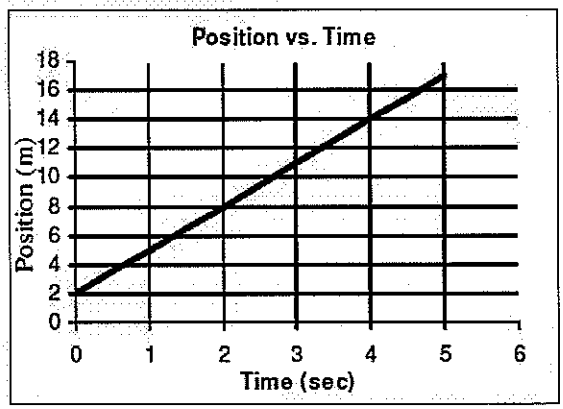
How much speed does it gain in the first 5 seconds? 150m/s

Find the slope of the graph (must show work)

$\Delta Y = 150m$, $\Delta X = 5sec$

$slope = \frac{\Delta y}{\Delta x} = \frac{150m}{5sec} = 30m/s^2$

What does the slope you just found stand for? acceleration



Which is the independent variable? Time

Which is the dependent variable? Position

Where was the object at 4 seconds? 14m

Where did the object begin? 2m

Find the slope of the graph (must show work)

$\Delta Y = 14m - 2m = 12m$, $\Delta X = 4sec$

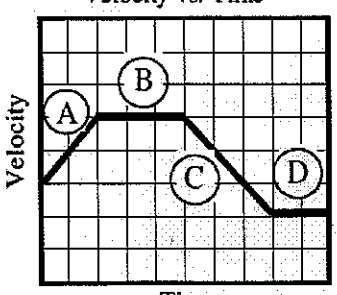
$Slope = \frac{\Delta Y}{\Delta X} = \frac{12m}{4sec} = 3\ m/s$

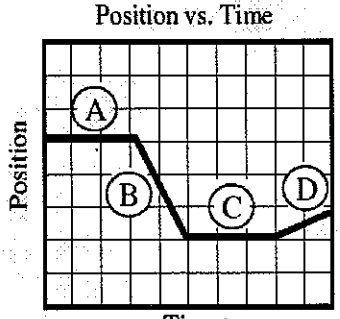
What does the slope you just found stand for? Speed or Velocity

The slope of this graph means: acceleration

Which segment shows:

Increasing velocity: A
Constant velocity: B, D
Positive acceleration: A
Negative acceleration: C
Speeding up: A
Slowing down: C





Which segments shows:

At rest: A, C
Fast speed: B
Slow speed: D
Going backwards: B
Going forward: D
Negative speed: B
Speed equals zero: A & C