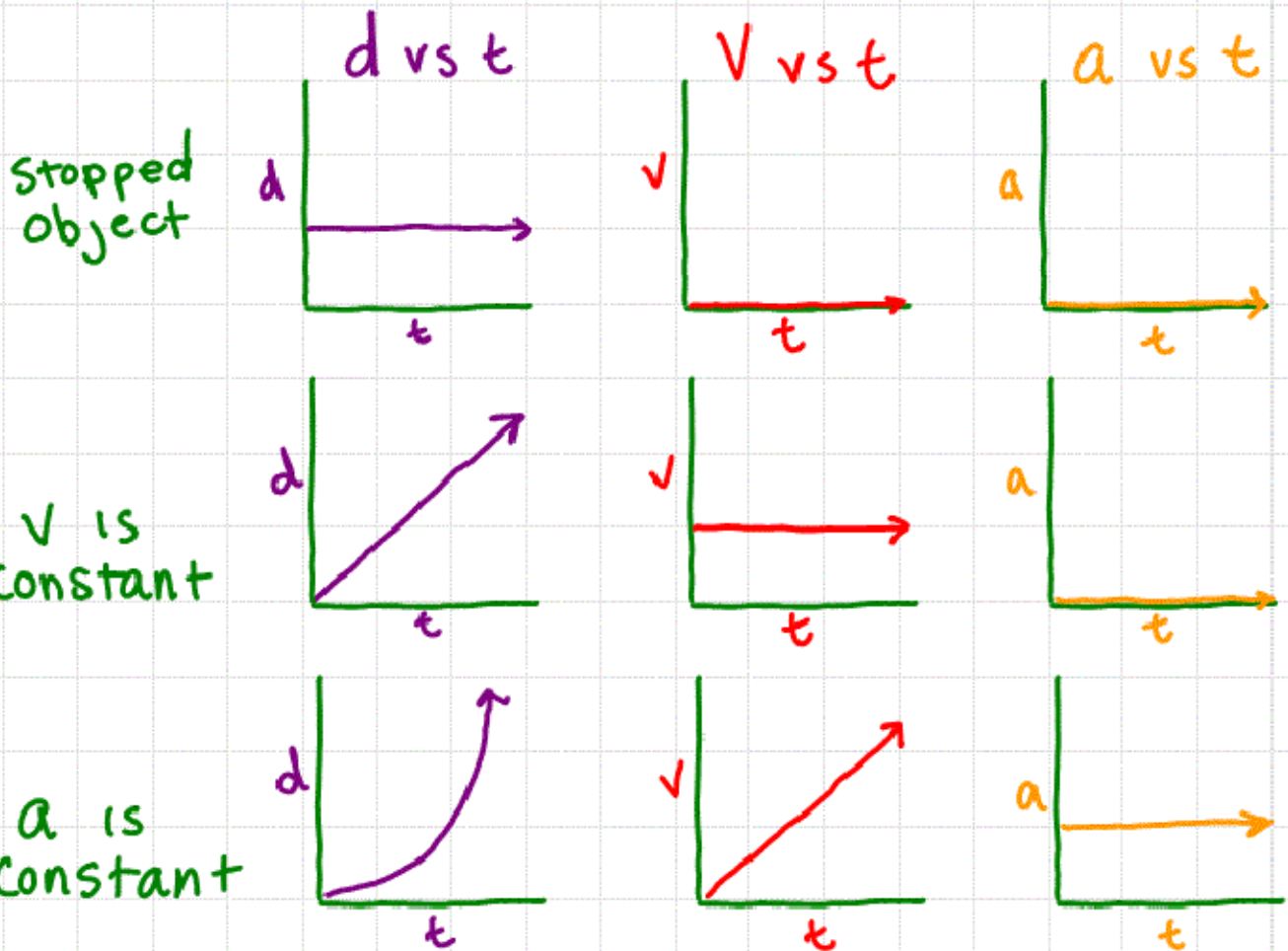


# Graphing Motion

Note Title

8/25/2011

Common graphs:



these above graphs give an idea of what each graph might look like

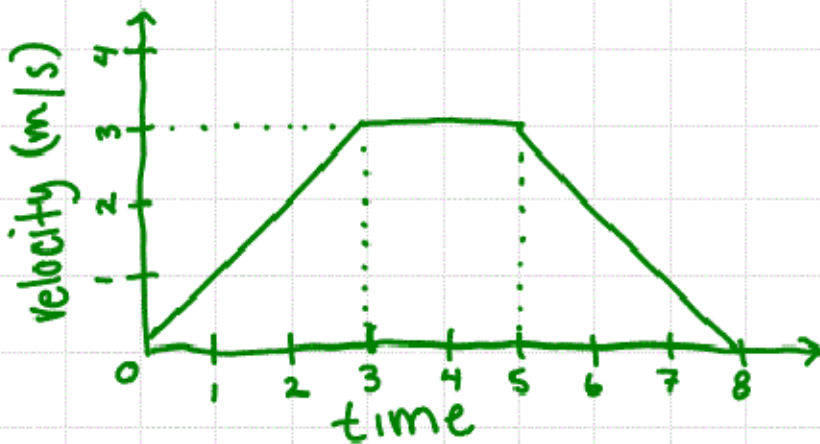
Pay attention to the slope

distance vs time  $\xrightarrow{\text{SLOPE GIVES}}$  Velocity!

distance traveled  $\xleftarrow{\text{AREA GIVES}}$  Velocity vs. time

Velocity vs. time  $\xrightarrow{\text{SLOPE GIVES}}$  acceleration!

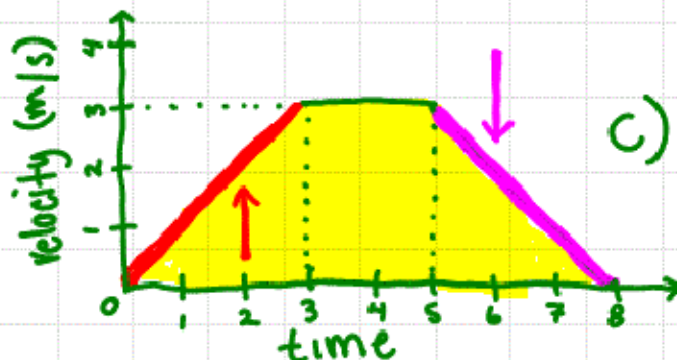
if you forget this, check the units  
this will indicate what your slope/Area means.



- describe this motion
- acceleration @ 2s?
- acceleration @ 6s?
- total distance traveled?

- velocity is increasing until 3 seconds
  - velocity stays constant for 2 seconds
  - velocity decreases for 3 seconds
- NOT STOPPED!

b) since the RED line has 1 slope, it will give the acceleration @ 2s  
 $1 \text{ m/s}^2$

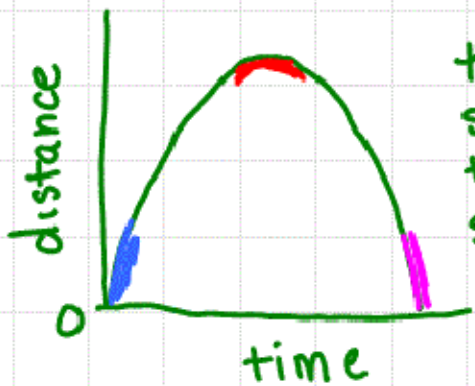


c) The pink line's slope will give acceleration at 6 seconds  
 $-1 \text{ m/s}^2$

d) The distance traveled is given by the total AREA. This is the YELLOW shape.  $15 \text{ m}$

One last thing...

For us, the  $d$  vs  $t$  graph will be the only graph that could have a curved shape



this graph starts with a steep positive slope, moves to zero slope, then a steep negative slope.

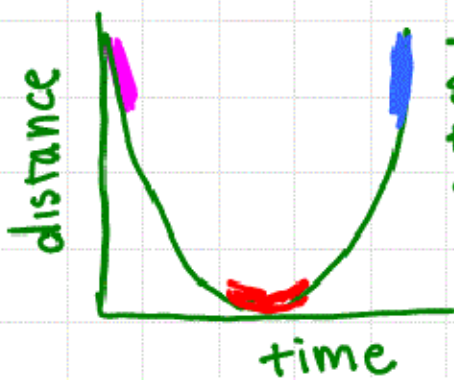
**NEGATIVE ACCELERATION**

Velocity:

FAST

STOP

Backwards



this graph starts with a steep negative slope, moves to zero slope, then a steep positive slope

**POSITIVE ACCELERATION!**

Velocity:

Backwards

STOP

FAST

EASY TRICK



← A Part of a smile is Positive.

A part of a frown is Negative

