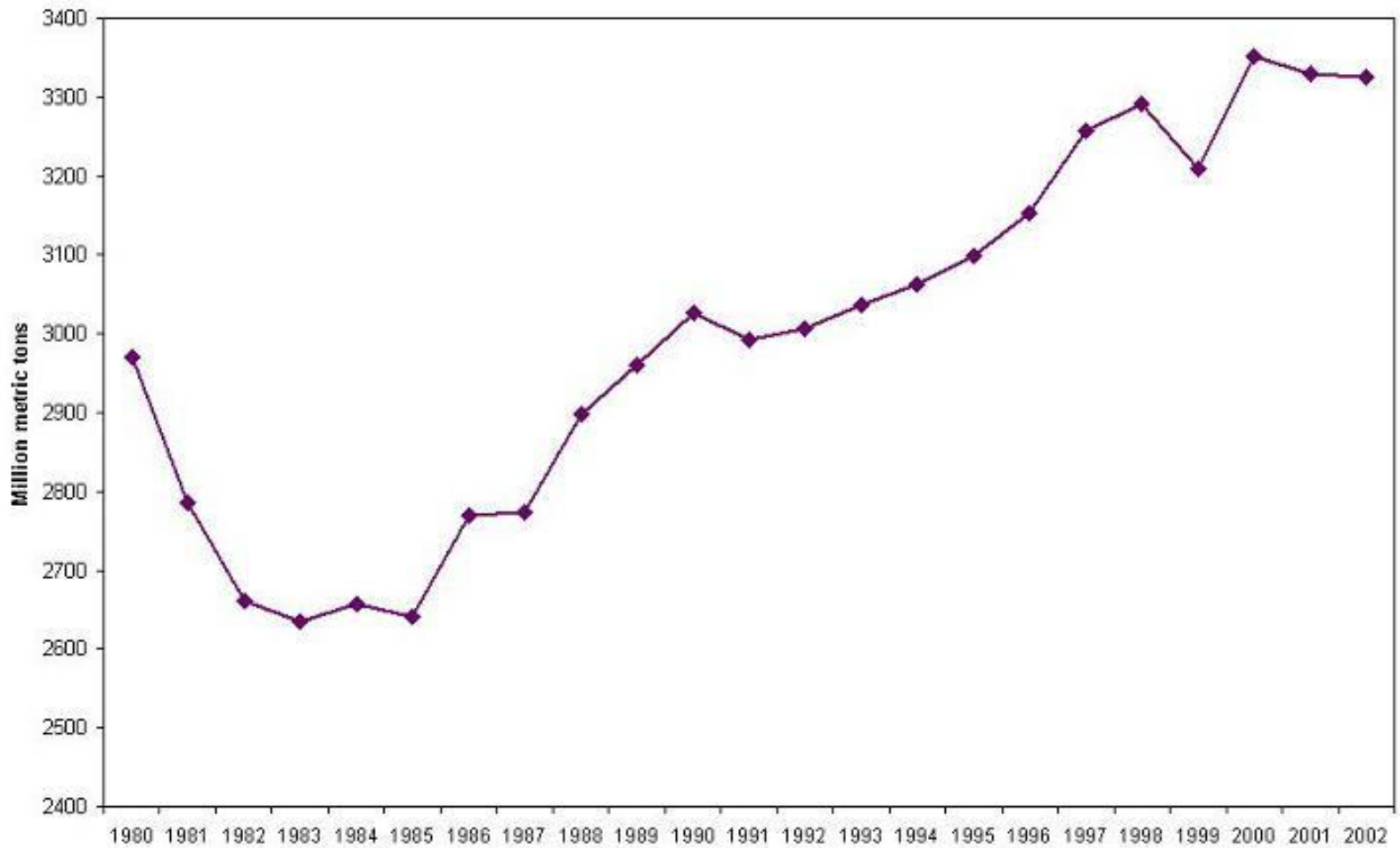


# Graphs and Charts



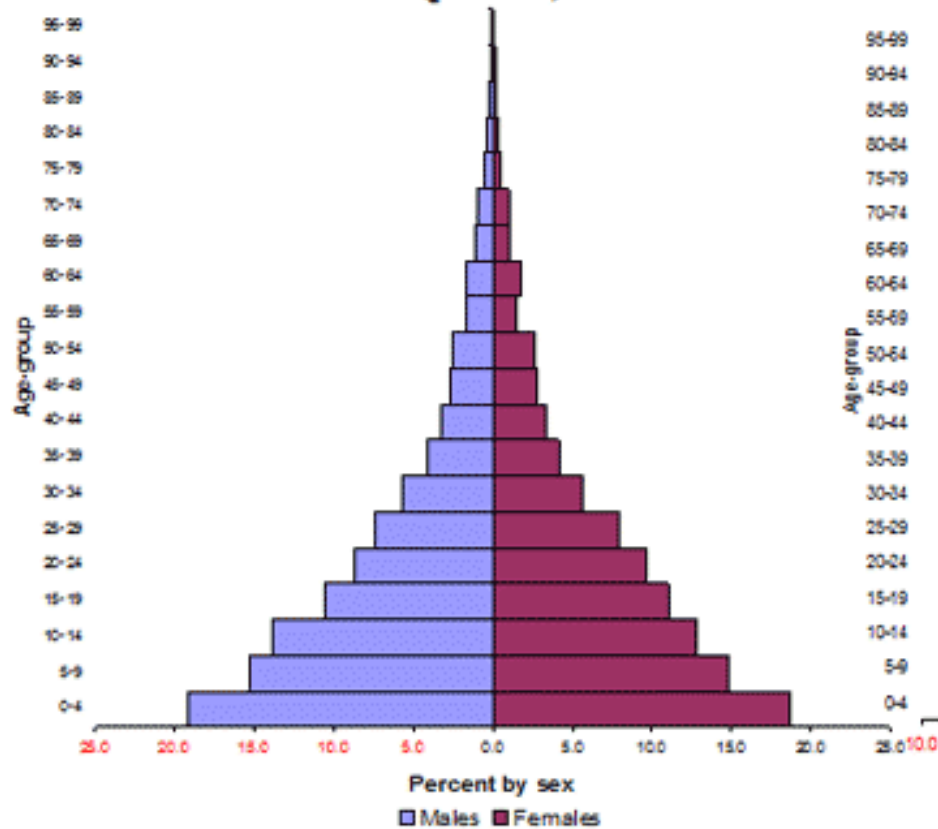
Grace Guan '13 ☺  
Josh Wilding '15 :D  
4/18/13

World Crude Oil Production 1980-2002

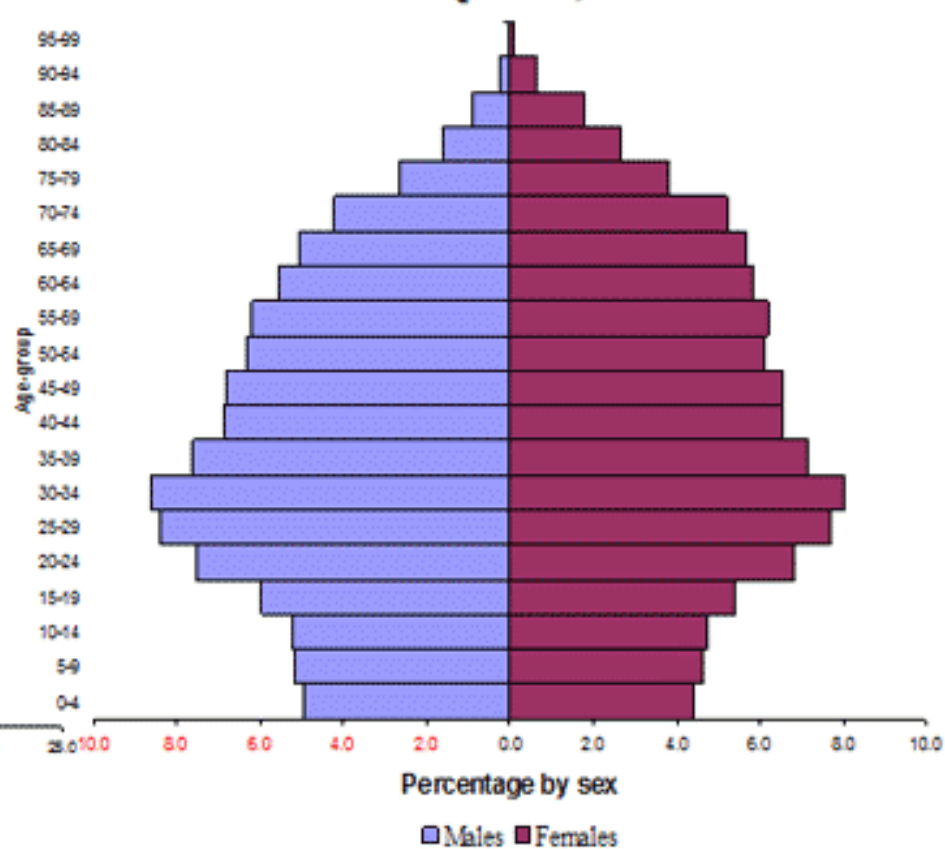


Source: United Nations Statistics Division - Energy Section Energy Statistics Yearbook 2002

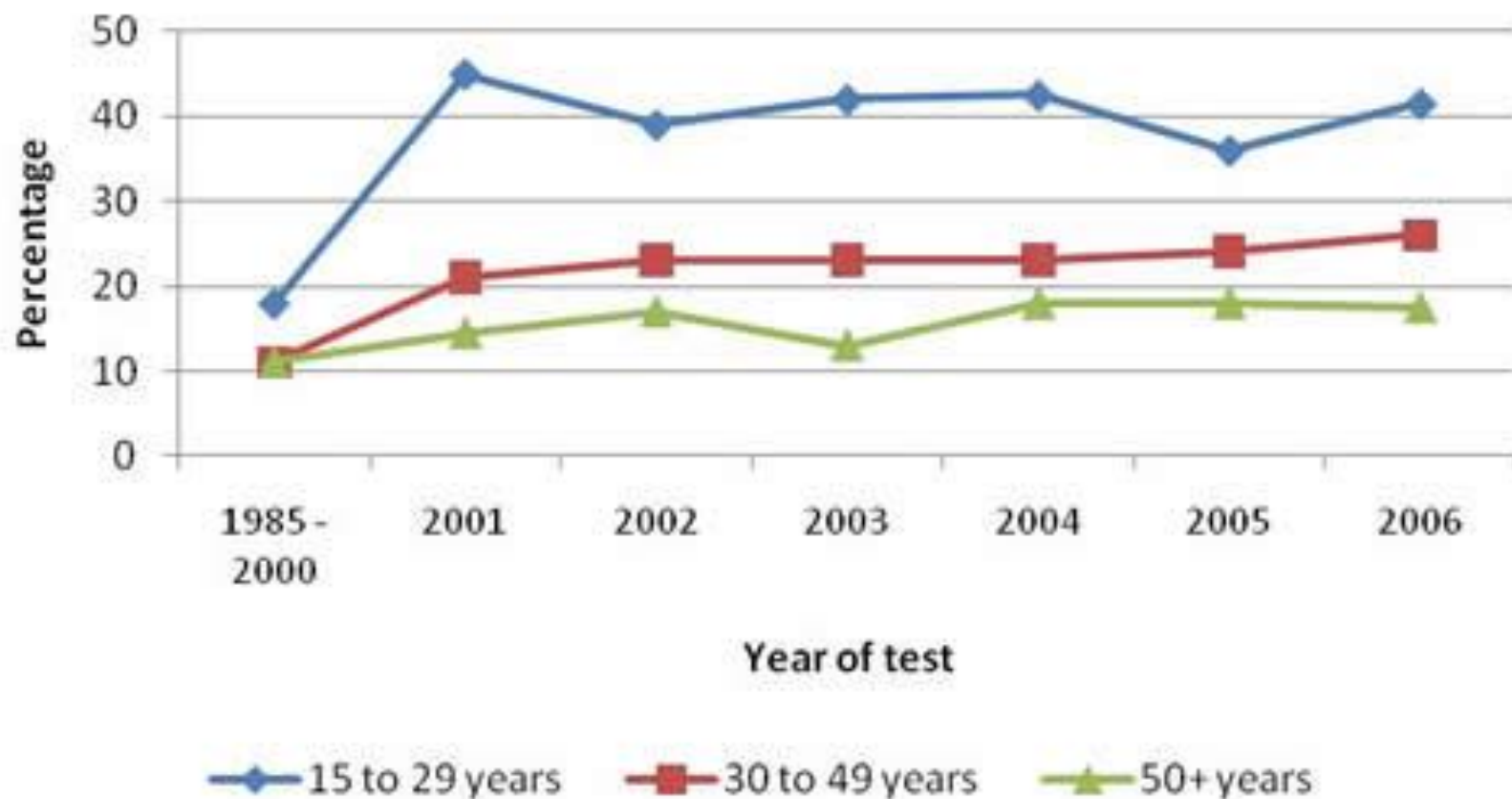
Population by sex and age, Uganda 1991  
(percent)



Population by sex and age, Italy 1998  
(percent)



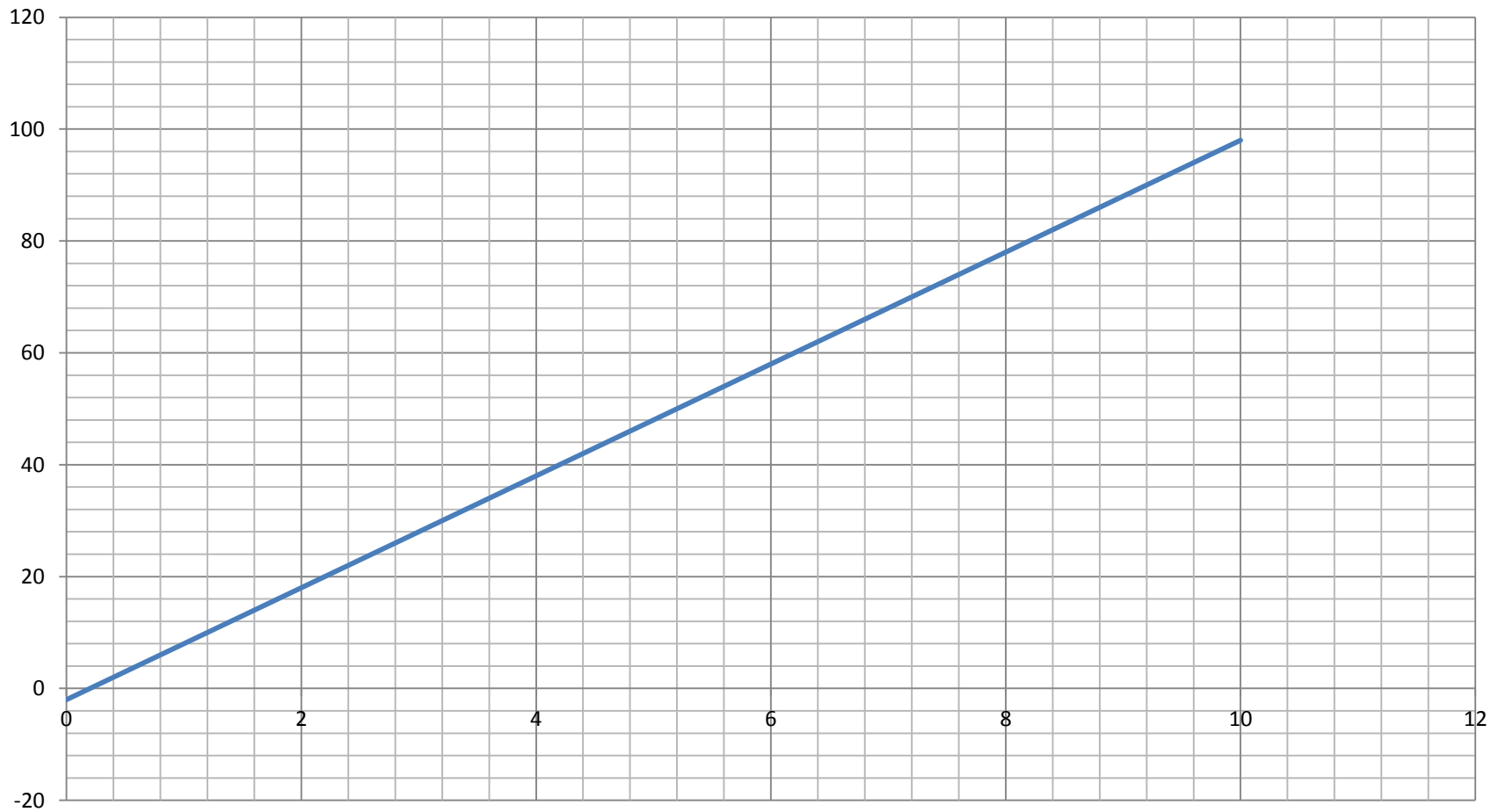
**Percent of all positive HIV Test Reports Accounted for by Women, by Age Group and Year of Test, 1985-2006**



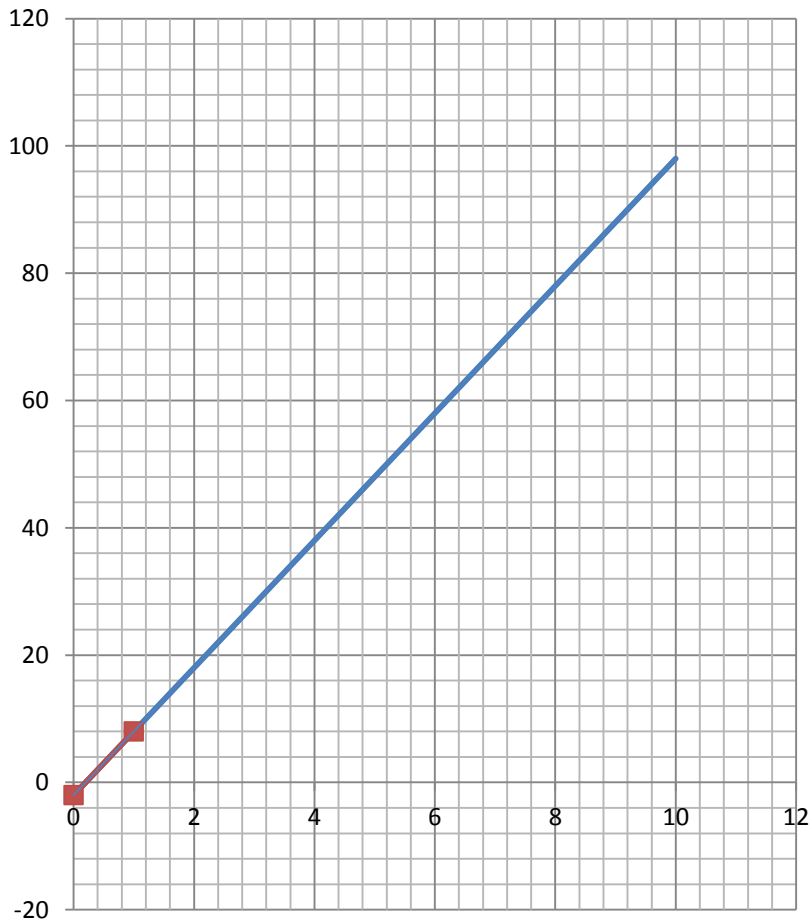
# Slope of a Line

- The rate at which a line changes between points.
- For the linear function  $y(x) = mx+b$
- Slope =  $m$

$$y = 10x - 2$$

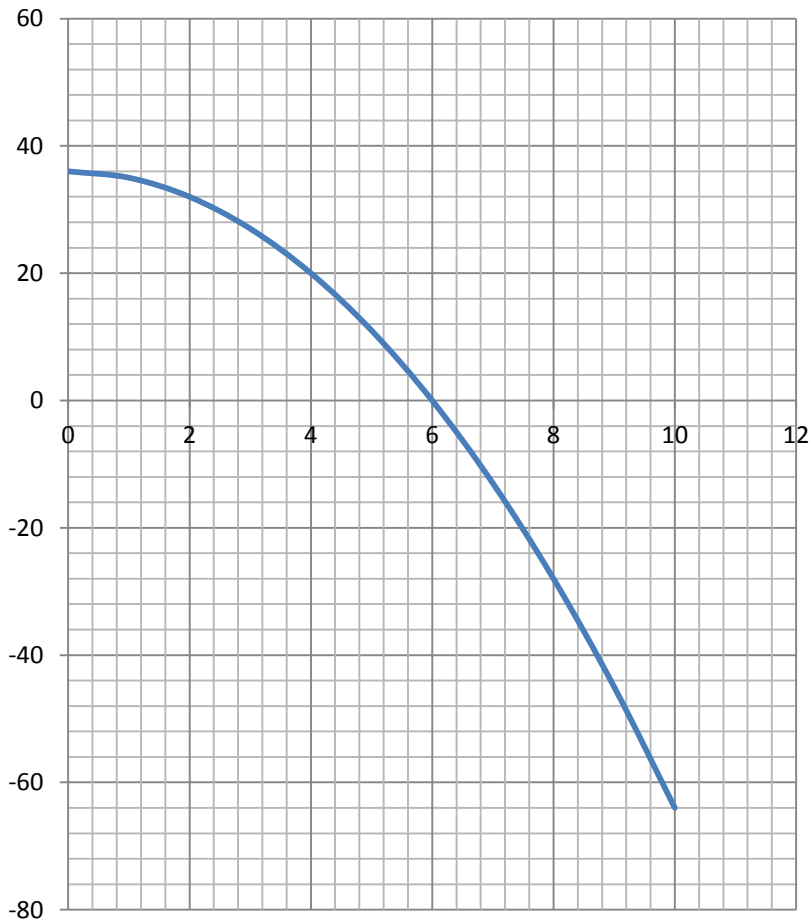


# $y = 10x - 2$



- $y$  increases by 10 each time  $x$  increases by 1.
- Consider the points  $(0, -2)$  and  $(1, 8)$ .
- Slope =  $(8 - (-2)) / (1 - 0)$   
=  $10/1$   
= **10**.

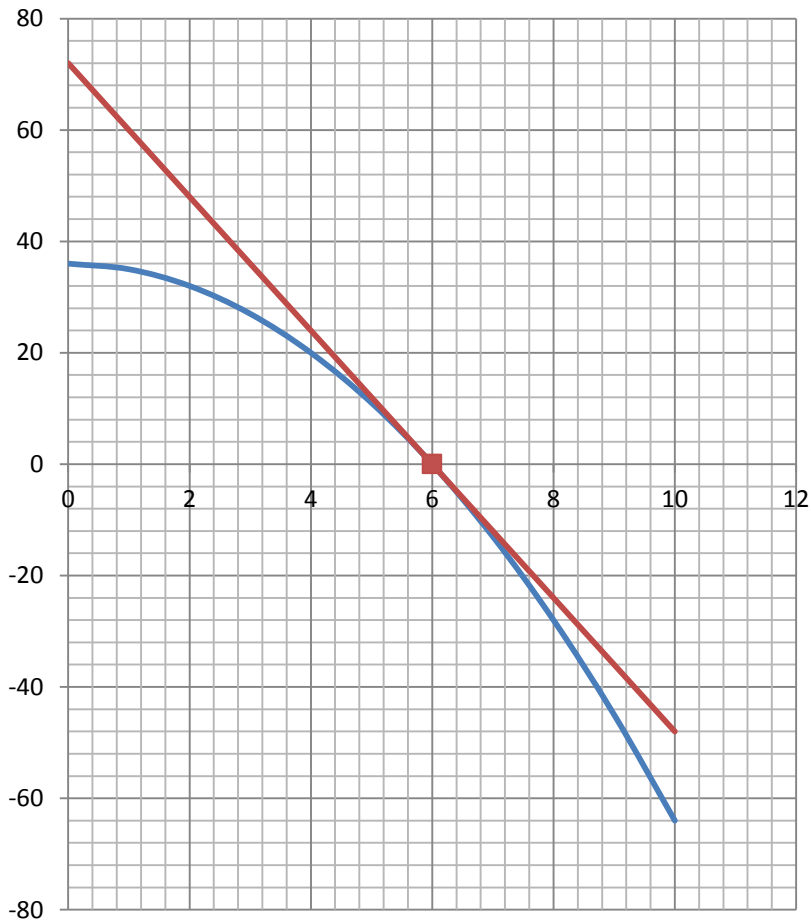
# Slope of a Curve



- Rate of change at a particular point.
- Can be defined as the slope of a line tangent to that point.



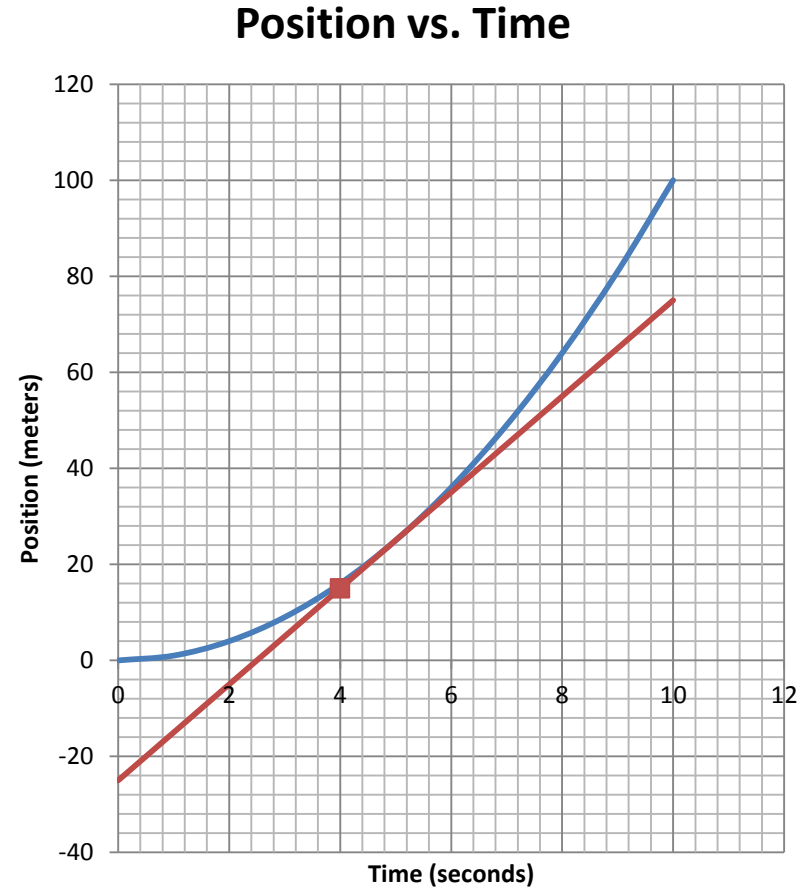
# Slope of a Curve



- Finding the slope at  $(6,0)$ .
- Find slope of line that is tangent to the curve at that point.
- Tangent line slope =  $-12$ .

# Applications

- Finding rates of change over time.
- Many uses in physics, economics, and other fields.
- The slope of a position graph is velocity.



# Creating Graphs in Excel

