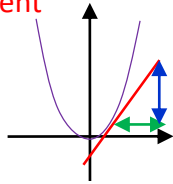


1) Draw an accurate sketch of the **Memory** curve.

2) At the point where you need to know the gradient, draw a **tangent** to the curve.



3) Calculate the gradient of the tangent.  $m = \frac{\text{change in } y}{\text{change in } x}$

Write as much as you can about the word tangent for each of the four categories.

Examples

Facts / Characteristics

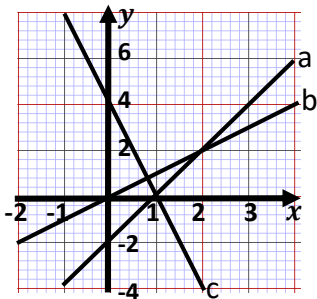
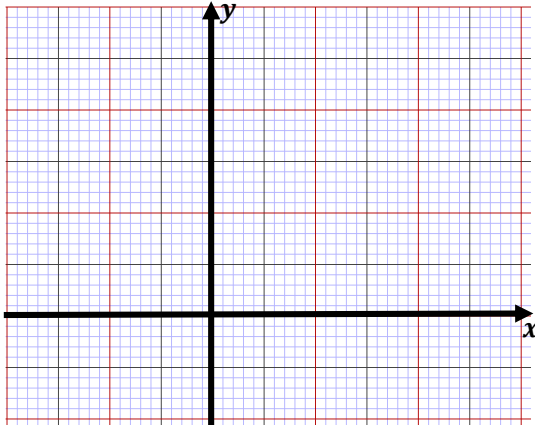
Non Examples / Misconceptions

Definition

Literacy

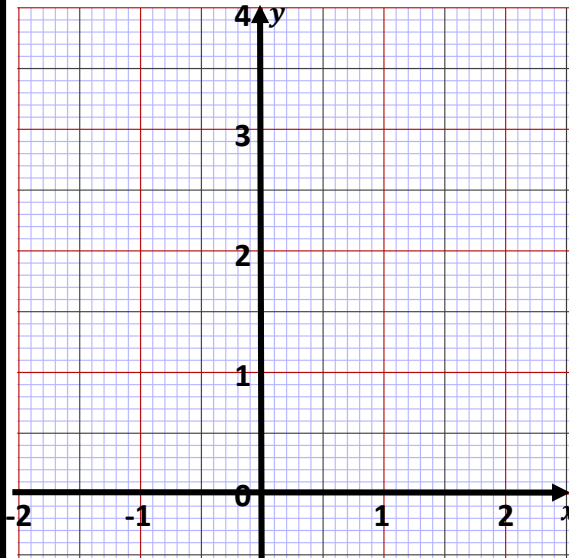
Accurately draw the graph  $y = x^2 - 2$

Rok



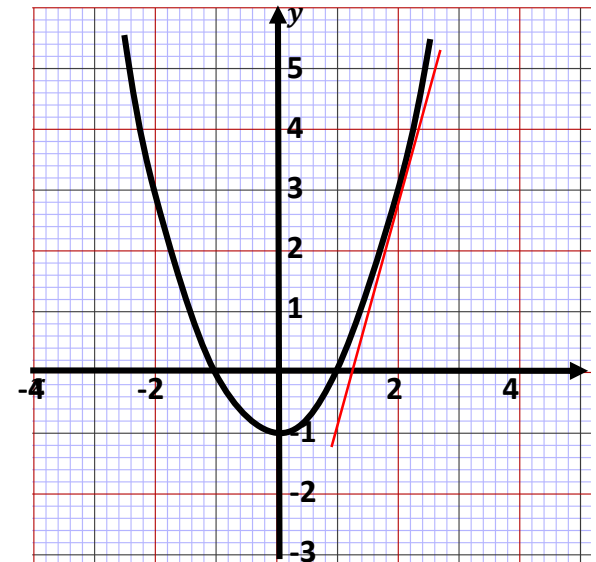
Calculate the gradient of the lines:

- a)
- b)
- c)



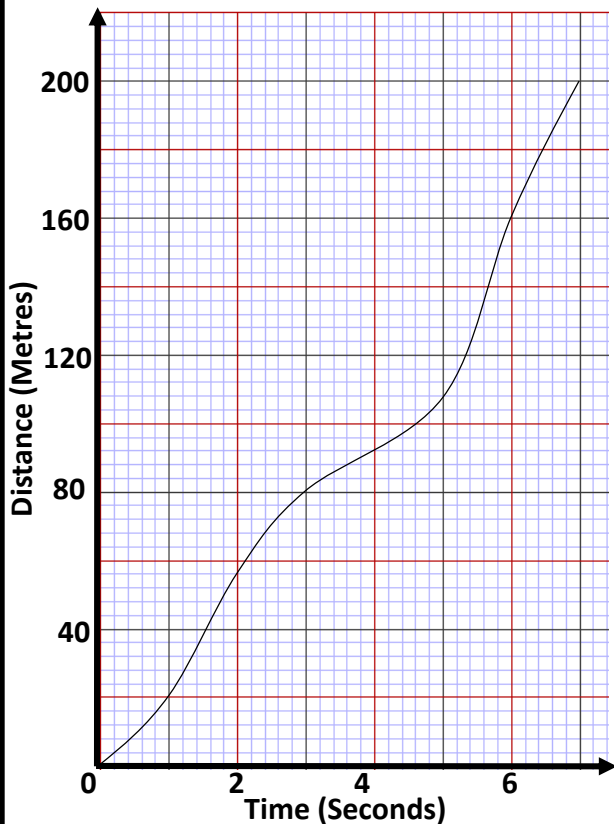
Find the gradient of the curve **Skill 1**  
 $y = x^2$  at the point (1,1).

Find the gradient of the curve  
 $y = x^2 - 1$  at the point (2,3).



Gradient as a Rate of Change

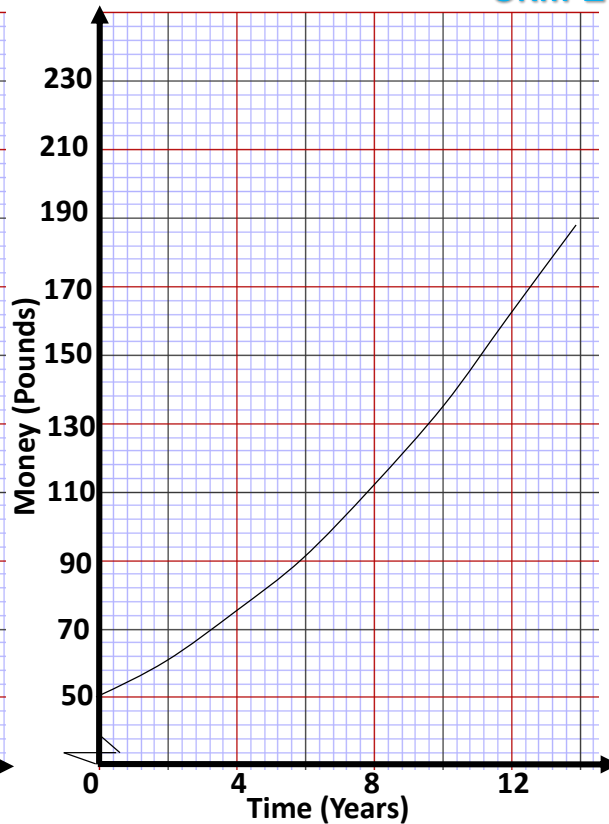
[www.missbsresources.com](http://www.missbsresources.com)



The graph above shows the running distance travelled by a female cheetah in 7 seconds.

- Calculate the average speed of the Cheetah between 3 and 6 seconds.
- Estimate the speed of the Cheetah at 5 seconds.

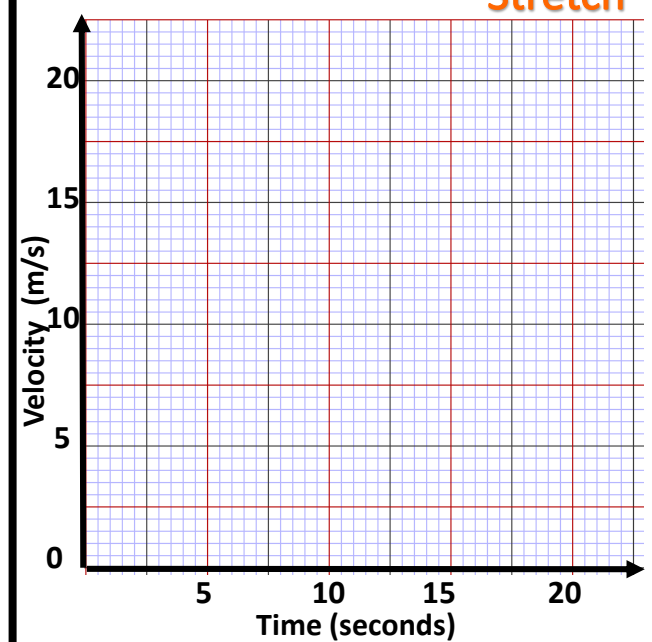
## Skill 2



Anna placed £50 into a savings ISA. She gains 10% interest each year.

- How much will Anna have in 4 years?
- Work out the rate of change of money in the account at 6 years.
- What is the rate of change of money in the account at 12 years?

## Stretch



- A runner is running in a sprint race.
- They travel with constant acceleration for 6 seconds reaching a velocity of 10 m/s.
  - They then slow down slightly with constant deceleration of 1 m/s for 4 seconds
  - They travel at a constant velocity of 6 m/s for 7 seconds
  - They then accelerate for 5 seconds reaching a constant velocity of 12 m/s
  - They then deaccelerate rapidly and stop at 25 seconds.
- Draw a velocity-time graph for the runner.
  - Work out the acceleration of the runner at 5 seconds.
  - Work out the deceleration of the runner at 8 seconds.
  - Calculate the total distance travelled by the runner.

