# Advice

## Pure

* Consider the range of validity whenever doing any approximation, it may be useful.
* You can use change of sign to show something, like one function takes over another.
* Remember you consider the second derivative either side to show its a point of inflection.
* Be careful with negative parts of the total shaded area.
* Check the answer careful (eg, 2 POSITIVE DISTINCT ROOTS so ensure the question matches up with your diagram).

## Mechanics

* Consider directions very carefully. Draw arrows if it helps you decide what to take as the positive direction.
* Remember that the point of tilting is an idea you may have to use.

## Statistics

* You may have to use a probability from the normal distribution in a binomial distribution.
* Remember to give the conclusion to a hypothesis test in context.
* Be very careful with the headings of the table for PMMC, you look at 1-tail, look across then look down or look at 2-tail across then down.
* Use complements more often to speed things up.
* Type I Errors may well come up here too.

# Extra Content

## Pure

* logba = 1 / logba
* You can calculate the derivative either side to show its a maxima rather than working out a complicated second derivative.

## Mechanics

* The significance of a string being inextensible in pulleys is that the tension is constant throughout the string.

## Statistics

* For correlation hypothesis, you should write:
  + H0: p = 0, no correlation.
  + H1: p > or < 0.
* Explicitly write what to accept or reject.
* Use the databook for PMCC values.
* PMCC is represented by ρ (rho).
* Values are rounded to the nearest whole number so are actually non-zero (1) and are available to a larger number of dp.
* You can calculate the values 3 standard deviations below and if it is less than zero then it may not be an appropriate model
* Ranges are continuous, remember this when using midpoints.
* When using data to estimate (e.g., when it states ‘not included in the 500 patients’). **DO NOT** minus one from the denominator of each fraction each time as it’s sample data.
* If you’re using probabilities for hypothesis tests, use p and define p as being the probability of [insert context here].