AQA

Level 3 Certificate
MATHEMATICAL STUDIES

Formulae Sheet

Information
This formulae sheet should be issued to all candidates for use with all Mathematical Studies examinations.

These formulae are not required to be learnt. A clean copy of this formulae sheet will be issued to you in the examination.

Volume and surface area

Shape	Volume	Surface area
Cone	$V = \frac{1}{3}\pi r^2 h$	$A = \pi rl + \pi r^2$
Sphere	$V = \frac{4}{3}\pi r^3$	$A = 4\pi r^2$
Pyramid	$V = \frac{1}{3}\text{base} \times h$	

Financial calculation – AER

The annual equivalent interest rate (AER), r, is given by

$$r = \left(1 + \frac{i}{n}\right)^n - 1$$

where i is the nominal interest rate, and n the number of compounding periods per year.

Note: the values of i and r should be expressed as decimals.

Financial calculation – APR

The annual percentage interest rate (APR) is given by

$$C = \sum_{k=1}^{m} \left(\frac{A_k}{(1+i)^{t_k}}\right)$$

where £C is the amount of the loan, m is the number of repayments, i is the APR expressed as a decimal, £A_k is the amount of the kth repayment, t_k is the interval in years between the start of the loan and the kth repayment.

It may be assumed that there are no arrangement or exit fees.

END OF FORMULAE SHEET