Government of **Western Australia**
School Curriculum and Standards Authority

MATHEMATICS APPLICATIONS ATAR COURSE

FORMULA SHEET

2016

This document is valid for teaching and examining until 31 December 2016.

Bivariate data analysis

Coefficient of determination = r^2 where r is the correlation coefficient

Least-squares line: $y = a + bx$ where y is the response variable and x is the explanatory variable

Growth and decay in sequences

First-order linear recurrence relation: $t_1 = a,\ t_{n+1} = bt_n + c \quad \text{for } n \geq 1$

Graphs and Networks

Euler's formula in connected planar graphs: $v + f - e = 2$ where v is the number of vertices, f is the number of faces and e is the number of edges

Loans, investments and annuities

Effective annual rate of interest: $i_{effective} = (1 + \frac{i}{n})^n - 1$
where n is the number of compounding periods per annum and i is the annual interest rate

For principal P, annual rate of interest r, and number of years t,

Simple interest: $I = Prt$

Compound interest: $A = P(1 + r)^t$ compounded annually

$A = P(1 + \frac{r}{n})^{nt}$ compounded n times a year

Note: Any additional formulas identified by the examination panel as necessary will be included in the body of the particular question.