

# The Australian Curriculum Mathematics

## Year 10A

### Year 10A Content Descriptions

#### Number and Algebra

##### Real numbers

Define rational and irrational numbers and perform operations with surds and fractional indices (ACMNA264)



Use the definition of a logarithm to establish and apply the laws of logarithms (ACMNA265)



##### Patterns and algebra

Investigate the concept of a polynomial and apply the factor and remainder theorems to solve problems (ACMNA266)



##### Linear and non-linear relationships

Describe, interpret and sketch parabolas, hyperbolas, circles and exponential functions and their transformations (ACMNA267)



Solve simple exponential equations (ACMNA270)



Apply understanding of polynomials to sketch a range of curves and describe the features of these curves from their equation (ACMNA268)



#### Measurement and Geometry

##### Using units of measurement

Solve problems involving surface area and volume of right pyramids, right cones, spheres and related composite solids (ACMMG271)



##### Geometric reasoning

Prove and apply angle and chord properties of circles (ACMMG272)



##### Pythagoras and trigonometry

Establish the sine, cosine and area rules for any triangle and solve related problems (ACMMG273)



Use the unit circle to define trigonometric functions, and graph them with and without the use of digital technologies (ACMMG274)



Solve simple trigonometric equations (ACMMG275)



Apply Pythagoras' Theorem and trigonometry to solving three-dimensional problems in right-angled triangles (ACMMG276)



#### Statistics and Probability

##### Chance

Investigate reports of studies in digital media and elsewhere for information on their planning and implementation (ACMSP277)



##### Data representation and interpretation

Calculate and interpret the mean and standard deviation of data and use these to compare data sets (ACMSP278)



Use information technologies to investigate bivariate numerical data sets. Where appropriate use a straight line to describe the relationship allowing for variation (ACMSP279)



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Factorise monic and non-monic quadratic expressions and solve a wide range of quadratic equations derived from a variety of contexts (ACMNA269)

