

# Year 11 Calculus Scholarship Workbook

Phil Adams

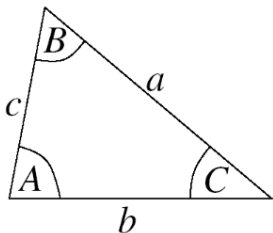
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# 1 Non right-angle trigonometry

Given a triangle with no right angles, with sides and angles labelled as below, there are three useful rules that we can use:



## Sine Rule

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

## Cosine Rule

$$c^2 = a^2 + b^2 - 2ab \cos C$$

## Area of triangle

$$A = \frac{1}{2}ab \sin C$$

## Questions

(Answers - page 6)

Questions go here

1.  $(x + y)^3$

2.  $(2x + y)^4$

3.  $(2x - 3)^5$

4.  $(3x + 2y)^4$

5.  $(2x + \frac{1}{x^2})^4$

# Solutions

## Answers - Non right-angle trigonometry answers (page 4)

1.  $(x + y)^3 = x^3 + 3x^2y + 3xy^2 + y^3$