



Section A: Key vocabulary	
Tier 3 Vocabulary	Definition
Circumference	The distance around the outside of a circle
Radius	The distance from the centre of a circle to its circumference
Diameter	A straight line passing through the centre of a circle from one side to the other
Tangent	A straight line touching a curve at a single point
Chord	A straight line joining two points on the circumference of a circle
Arc	A piece of a circumference
Sector	A piece of a circle, bounded by two radii and an arc
Coefficient	A number multiplied by a variable (in the expression $3x^2$ the coefficient of x^2 is 3)
Gradient	The steepness of a line
Perpendicular	At a right angle
y-intercept	Where a line crosses the y-axis
Reciprocal	Two numbers are the reciprocal of each other if they multiply to 1
Subtended	Created from
Tier 2 Vocabulary	Definition
Simultaneous	At the same time
Substitution	Putting one thing in place of another
Eliminate	To remove or get rid of something
Intersection	The place where two or more objects meet

Section B: Key Facts and Processes	
Solving Simultaneous Equations	
By elimination	Equate the coefficients of one of the variables in both equations. Then add/subtract the equations so
By substitution	Make one of the variables the subject of an equation. Then replace that variable in the other equation with the right-hand side of the first equation
Circle Formulae	
Sector Area	$\frac{\theta}{360} \times \pi r^2$
Arc Length	$\frac{\theta}{360} \times \pi d$
Equation of a Circle	$x^2 + y^2 = r^2$
Circle Theorems (see section C for diagrams)	
1. Angles in a semi-circle...	Are 90°
2. Angles at the centre...	Are double angles at the cir-
3. Angles subtended from the	Are equal
4. Opposite angles in a cyclic	Sum to 180°
5. Two tangents from a circle that meet at the same point...	Are equal in length
6. Angles created between a tangent and a chord...	Are equal to angles in the alternate segment
Equation of a Tangent (see section C)	

Section C: Support	
Finding the Equation of a Tangent 1. Find the gradient of the radius by using dy/dx between the origin (0,0) and the co-ordinates of the point where the circumference meets the tangent 2. Find the negative reciprocal of step 1 (this is the perpendicular gradient and therefore gradient of the tangent) 3. Use the perpendicular gradient and the co-ordinates of a point on the tangent to find the equation of the tangent in the form $y = mx + c$	
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Topic	Videos
Simultaneous Equations	190-195, 246
Equation of a Circle	778-779
Circle Theorems	592-606, 816-818
Arc Length and Sector Area	544-547