|  |  |
| --- | --- |
| **H Unit 10: Circle theorems and circle geometry** | **Year 11 Road Map** |
| In this unit you will learn about Geometry. The aims are as follows:**LG1**: Knowledge **LG2**: Application **LG3**: SkillsAssessment Grades |
|  | **Learning Goals/Outcomes/Content** | Video clips | R A G |  |  |
| 10a Circle theorems |
| 1 | Recall the definition of a circle and identify (name) and draw parts of a circle, including sector, tangent, chord, segment;  | 116, 149 |  |  |  |
| 2 | Prove and use the facts that: |  |  |  |  |
| 3 | the angle subtended by an arc at the centre of a circle is twice the angle subtended at any point on the circumference; | 183, 184 |  |  |  |
| 4 | the angle in a semicircle is a right angle; | 183 |  |  |  |
| 5 | the perpendicular from the centre of a circle to a chord bisects the chord; | 183 |  |  |  |
| 6 | angles in the same segment are equal; | 183, 184 |  |  |  |
| 7 | alternate segment theorem; | 183 |  |  |  |
| 8 | opposite angles of a cyclic quadrilateral sum to 180°; | 183, 184 |  |  |  |
| 9 | Understand and use the fact that the tangent at any point on a circle is perpendicular to the radius at that point; |  |  |  |  |
| 10 | Find and give reasons for missing angles on diagrams using:  | 183 |  |  |  |
| 11 | circle theorems; | 183 |  |  |  |
| 12 | isosceles triangles (radius properties) in circles; | 183 |  |  |  |
| 13 | the fact that the angle between a tangent and radius is 90°; | 183 |  |  |  |
| 14 | the fact that tangents from an external point are equal in length. | 183 |  |  |  |
| 10b Circle geometry |
| 15 | Select and apply construction techniques and understanding of loci to draw graphs based on circles and perpendiculars of lines;  | 146 |  |  |  |
| 16 | Find the equation of a tangent to a circle at a given point, by:  | 197 |  |  |  |
| 17 | finding the gradient of the radius that meets the circle at that point (circles all centre the origin); | 197 |  |  |  |
| 18 | finding the gradient of the tangent perpendicular to it;  | 208 |  |  |  |
| 19 | using the given point;  | 197 |  |  |  |
| 20 | Recognise and construct the graph of a circle using *x*2 + *y*2 = *r*2 for radius *r* centred at the origin of coordinates.  | 197 |  |  |  |
| Student’s comments and questions |