MA232A, Annual Examination 2018 Syllabus of Examinable Material

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General

Candidates should be familiar with any definitions presented in sections 5, 6 and 7 and may be examined on those definitions. Candidates will not be examined on the definitions included in the translated text of Euclid's *Elements of Geometry*.

Material presented in Sections 1 and 2 of the MA232A module content for Michaelmas Term 2017 is *non-examinable* as bookwork, though candidates are advised to be familiar with the congruence rules set out in Section 2 (see the syllabus for Section 3 below).

Examination Syllabus for Section 3 (Euclid I)

In addition to the propositions in Book I listed below as examinable, candidates should be familiar in particular with the postulates and common notions (axioms) and with the results of the following propositions in Book I: 4, 5, 6, 8, 13, 14, 15. These propositions may be identified in proofs etc. as follows:

Proposition 4 is the SAS Congruence Rule;
Propositions 5 and 6 together constitute the Isosceles Triangle Theorem;
Proposition 8 is the SSS Congruence Rule;
Propositions 13 and 14 concern supplementary angles;
Proposition 15 is the Vertical Angles Theorem.

(Note that the ASA Congruence Rule and the AAS Congruence Rule are combined in Proposition 26, whose proof is listed below as examinable.)

Proofs of the following propositions in Book I of Euclid's *Elements of Geometry* are examinable:—

Book I

Book I, Proposition 16 Book I, Proposition 18 Book I, Proposition 24 Book I, Proposition 26 Book I, Proposition 27 Book I, Proposition 28 Book I, Proposition 30 Book I, Proposition 32 Book I, Proposition 33 Book I, Proposition 34 Book I, Proposition 35 Book I, Proposition 35 Book I, Proposition 37 Book I, Proposition 37 Book I, Proposition 43 Book I, Proposition 43

Examination Syllabus for Section 4 (Euclid II, III and IV)

Proofs of the following propositions in Books II, III and IV of Euclid's *Elements of Geometry* are examinable:—

Book II

Book II, Proposition 5 Book II, Proposition 6 Book II, Proposition 11

Book III

Book III, Proposition 1 Book III, Proposition 2 Book III, Proposition 3 Book III, Proposition 16 Book III, Proposition 17 Book III, Proposition 18 Book III, Proposition 19 Book III, Proposition 20 Book III, Proposition 21 Book III, Proposition 22 Book III, Proposition 31 Book III, Proposition 32 Book III, Proposition 35 Book III, Proposition 36 Book III, Proposition 37 **Book IV** Book IV, Proposition 2 Book IV, Proposition 10

In the case of Book III, Proposition 31, candidates are expected only to be able to prove that an angle in a semicircle is a right angle.

Examination Syllabus for Section 5

Proposition 5.6 Corollary 5.8 Proposition 5.9 Lemma 5.11 Proposition 5.12 Proposition 5.13

Examination Syllabus for Section 6

Proposition 6.1 Proposition 6.2 Proposition 6.3 Calculations in subsection 6.3

Examination Syllabus for Section 7

Corollary 7.3 Proposition 7.4 Proposition 7.6 Proposition 7.8