Assessment Schedule – 2007

Mathematics: Use geometric reasoning to solve problems (90153)

Evidence Statement

	Criteria	No.	Evidence	Code	Judgement	Sufficiency
Achievement	Use geometric reasoning to solve problems.	1(a) 1(b) 1(c)	∠ACB = 52° (∠s on a line) ∠BAC = 76° (∠ sum isos Δ) ∠IFG = 43° (∠s on a line) ∠GHI = 43° (opp ∠s //gram =) ∠JLN = 47° (Corr ∠s, // lines) ∠LMN = 180 – 47 – 98 = 35° (Co-int ∠s, // lines)	A A A	CAO CAO CAO Reasons are not required for Achievement.	TWO of code A Replacement evidence: any correct angle that involves at least two steps of geometric reasoning, from questions 2 and 3.
Achievement with Merit	Use, and state, geometric reasons in solving problems.	2(a) 2(b) 2(c)	Δs RSO and STO are isos (= radii) ∠RSO = (180° – 80°) ÷ 2 = 50° (∠ sum isos Δ) ∠SOT = 50° (alt ∠s, // lines) ∠STU = 65° (∠ sum isos Δ) ∠WXY = 48° (∠s on a line) ∠WYX = 48° (base ∠s =, isos Δ) ∠UXY = 132° (vert opp ∠s =) ∠XYU = 24° (base ∠s of isos ΔUXY) So ∠WYZ = 108° (∠s on a line) Δs ABE and ACD are similar So $\frac{AB}{12}=\frac{15}{20}$ or $\frac{AB}{15}=\frac{12}{20}$ So AB = 9 cm So DE = BC = 15 – 9 = 6 cm	M M M	Accept other valid chains of reasons. The solution must involve at least 2 steps supported by at least 2 correctly stated reasons. Question 2(c) must have reference to similarity of triangles.	**ACHIEVEMENT plus** TWO of code M OR THREE of code M Replacement evidence for M: a correct angle supported by a chain of geometric reasoning of at least two steps from question 3.
Achievement with Excellence	Solve an extended geometrical problem.	3	Δ OAC: isos Δ (= radii) ∠OCA = 38° (base ∠s isos Δ =) ∠AOC = 104° (∠ sum Δ) Reflex ∠ AOC = 256° (∠s at a pt) Δ ABC: ∠ABC = 128° ($^1/_2$ ∠ at centre) ∠BAC = 38° (alt ∠s, // lines) ∠ACB = 14° (∠ sum Δ)	 E	For code A, angle only is sufficient evidence. For codes M and E. reasons are also required. Accept other valid chains of reasons.	**MERIT plus** Code E

Judgement Statement

Achievement	Achievement with Merit	Achievement with Excellence
Use geometric reasoning to solve problems. $2 \times$ A	Use, and state, geometric reasons in solving problems**.** $2 \times$ A and $2 \times$ M *or* $3 \times$ M	Solve an extended geometrical problem. **Merit** *plus* $1 \times$ E

The following Mathematics-specific marking conventions may also have been used when marking this paper:

- Errors are circled.
- Omissions are indicated by a caret (^).
- **NS** may have been used when there was not sufficient evidence to award a grade.
- **CON** may have been used to indicate 'consistency' where an answer is obtained using a prior, but incorrect answer and **NC** if the answer is not consistent with wrong working.
- **CAO** is used when the 'correct answer only' is given and the assessment schedule indicates that more evidence was required.
- # may have been used when a correct answer is obtained but then further (unnecessary) working results in an incorrect final answer being offered.
- **RAWW** indicates right answer, wrong working.
- **R** for 'rounding error' and **PR** for 'premature rounding' resulting in a significant round-off error in the answer (if the question required evidence for rounding).
- **U** for incorrect or omitted units (if the question required evidence for units).
- **MEI** may have been used to indicate where a minor error has been made and ignored.