Assessment Schedule – 2008

Mathematics: Use geometric reasoning to solve problems (90153)

Evidence Statement

Question No	Achievement Use geometric reasoning to solve problems.	Code	Achievement with Merit Use, and state, geometric reasons in solving problems.	Code	Achievement with Excellence Solve an extended geometrical problem.	Code
1	$\angle AED = 106°$	A	$\angle FED = 74°$; symmetry $\angle AED = 106^o$; $\angle$s on a line	**M**		
2	$\angle HFG = 58°$	A	$\angle FHG = 61°$; $\angle$s on a line $\angle HFG = 58°$; $\angle$ sum isos Δ	**M**		
3	$\angle LRS = 18°$	A	$\angle LSR = 72°$; ext $\angle$ regular pentagon $\angle LRS = 18°$; $\angle$ sum rt $\angle$ Δ	**M**		
4	$\angle COD = 62°$	A	$\angle BFC = 59°$; alt $\angle$s, // lines $\angle OCD = 59°$; alt $\angle$s, // lines ΔCOD is isosceles; = radii $\angle COD = 62°$; $\angle$ sum isos Δ	**M**		
5	$\angle SPO = (90 - x + y)°$	A	$\angle POR = 2x°$; $\angle$ at centre = $2 \times \angle$ at circ. $\angle PSR = (180 - x)°$; opp $\angle$s, of cyclic quad	**M**	$\angle POR = 2x°$; $\angle$ at centre = $2 \times \angle$ at circ. $\angle PSR = (180 - x)°$; opp $\angle$s, of cyclic quad $\angle SRO = (90 - y)°$; radius $\perp$ tan $\angle SPO = (90 - x + y)°$; $\angle$ sum quad	**E**
6	$\angle FDE = 58°$	A	Let $x = \angle FDE = \angle BDC$; vert opp $\angle$s =. $\angle DFA = 36° + x$; ext $\angle$ of triangle DFE. $\angle DBA = 28° + x$; ext $\angle$ of triangle DBC.	**M**	Let $x = \angle FDE = \angle BDC$; vert opp $\angle$s =. $\angle DFA = 36° + x$; ext $\angle$ of triangle DFE. $\angle DBA = 28° + x$; ext $\angle$ of triangle DBC. $\angle DFA + \angle DBA = 180°$; opp $\angle$s cyclic quad. Solve: $36° + x + 28° + x = 180° \rightarrow x = 58°$.	**E**

Judgement Statement

Achievement	Achievement with Merit	Achievement with Excellence
Use geometric reasoning to solve problems. $2 \times A$ A numerically correct answer is evidence of achievement.	Use, and state, geometric reasons in solving problems. $3 \times M$ At least two named angles are correct and at least two different correct reasons are required. Accept other valid chains of reasons.	Solve an extended geometrical problem. Achievement with Merit plus $1 \times E$ Or $2 \times E$ At least three named angles are correct and at least three different correct reasons are required. Accept other valid chains of reasons.

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.