Assessment Schedule – 2007

Mathematics: Use straightforward algebraic methods and solve equations (90147)

Evidence Statement

	Achievement Criteria	No	Evidence	Code	Judgement	Sufficiency
ACHIEVEMENT	Use straightforward algebraic methods	1	$x + 2$	A1	Equivalent numerical values are acceptable.	**Achievement:** Two of A1 AND Two of A2 Replacement: Appropriate evidence for algebraic manipulation (**A1)** may be found in**:** Q5, Q6, Q7, Q8 and for solving equations (**A2**): Q7, Q8.
		2	$(x - 7)(x + 2)$	A1		
		3	$n = 6$	A1		
		4a	$m = 4$	A2		
	Solve equations.	b	$x = \frac{1}{2}, \quad x = -3$	A2		
		c	$x = \frac{16}{5}$ or $3\frac{1}{5}$ or 3.2	A2		

ACHIEVEMENT WITH MERIT	Use algebraic methods and solve equations in context.	5 6 7	$\frac{2p(p-6q)}{6p^2}$ or $\frac{2(p^2-6pq)}{6p^2}$ or $\frac{p(2p-12q)}{6p^2}$ $= \frac{p-6q}{3p}$ or $\frac{p^2-6pq}{3p^2}$ or $\frac{2p-12q}{6p}$ $w = \frac{A^2 g}{\pi^2}$ or $\left(\frac{A}{\pi}\right)^2 g$ 10 metres	M M M	**Units not required anywhere.** Any correct factorisation of the numerator could provide evidence for **A1.** Any correct simplification of the fraction could provide evidence for **M.** Accept equivalent representations of a simplified expression If brackets are not used, the working shown may be used as evidence that the correct order of operations was performed: • first: $\div$A by π ; • next: square it • $\times$ by g last **CAO** **CAO** is also evidence for **A2** If used, appropriate algebraic manipulation could provide evidence for **A1**.	**Merit:** **Achievement plus** Two M OR Three M
ACHIEVEMENT WITH EXCELLENCE	Use algebraic strategies to investigate and solve problems.	8	$(n+1)(n+2)-1=T$ or $(n+1)^2+n=T$ or $n(n+3)+n=T$ or $n^2+3n+1=T$ Solve: $(n+1)(n+2)-1=461$ $n^2+3n-460=0$ $(n+23)(n-20)=0$ n = –23 or 20 Since a positive value is sensible here, **Pattern Number is 20.**	E	Or equivalent. Writing the algebraic description for the pattern may be evidence for **A1** or **M**. Solved equation is evidence for **A2 / M.** **CAO** is evidence for **A2** For **E**, there must be valid equation(s), involving the relationship(s) between ***T*** (#tiles) and ***n*** (pattern #). The positive solution, 20, must be given as the solution to the problem.	**Excellence:** **Merit** **plus** E

Judgement Statement

Achievement	Achievement with Merit	Achievement with Excellence
Use straightforward algebraic methods. Solve equations. 2 × A1 *and* 2 × A2	Use algebraic methods and solve equations in context. **Achievement** *plus* 2 of code M *or* 3 × M	Use algebraic strategies to investigate and solve problems. **Merit** plus code 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.