Assessment Schedule – 2005

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

Evidence Statement

SQUARES

	Achievement Criteria	Q	Evidence	Code	Judgement	Sufficiency
Achievement	Solve equations.	1(a)	$x = \frac{1}{4}$ or $x = -1$	A1	Both solutions needed or equivalent.	**Achievement:** 2 × code A1 **plus** 2 × code A2 **Replacement evidence:** Q6, 7, 8 for A1 Q5, 6, 7, 8 for A2
		1(b)	$x = 1.6$ or $\frac{8}{5}$	A1	Or equivalent.	
		1(c)	$x = \frac{29}{4}$ or $7\frac{1}{4}$ or 7.25	A1	Or equivalent.	
	Use straightforward algebraic methods.	2	$2x^2 - x - 3$	A2	Accept $2x^2 + 2x - 3x - 3$	
		3	$(x - 4)(x + 2)$	A2	No alternative.	
		4	176	A2	No alternative.	
Achievement with Merit	Use algebraic methods and solve equations in context.	5	$\frac{8x}{15}$ or $0.53x$ (but not $0.5x$)	M, A2	Or equivalent	**Achievement with Merit:** **EITHER** As for Achievement **plus** 2 × code M **OR** 3 × code M. **Replacement evidence:** Q8 for M
		6	$x + 8 = \pm 15$ or $x^2 + 16x - 161 = 0$ $(x + 23)(x - 7) = 0$ $x = 7$ or $x = -23$ Side = 7 m	A2 A2 A1 M	} Only one from this question. $x = 7$ is sufficient for A1 Must show elimination of $x = -23$ Only one A from this question.	
		7	1250 small tiles (or S) 140 big tiles (or B)	A1 A2 M	One of the 2 values found correctly. Correct algebraic manipulation leading to one solution. Only one A from this question. Must have both values. Accept CAO.	
Achievement with Excellence	Use algebraic strategies to investigate and solve problems.	8	$(2x + 5)^2 - x^2 = 312$ $4x^2 + 20x + 25 - x^2 = 312$ $3x^2 + 20x - 287 = 0$ $(3x + 41)(x - 7) = 0$ $x = -\frac{41}{3}$ or $x = 7$ Since x is an integer, the numbers involved are: 7 and 19	A2 A2 A1, M E	Replaces Q2 Replaces Q3 } Only one from this question. Both solutions required for A1 or M. Must have the solution pair. Must have at least one equation. Must show elimination of $x = -\frac{41}{3}$	**Achievement with Excellence:** As for Merit **plus** code E.

Judgement Statement

Achievement	Achievement with Merit	Achievement with Excellence
Solve equations. Use straightforward algebraic methods. 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