Assessment Schedule – 2006

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

Evidence Statement

	Achievement Criteria	No.	Evidence	Code	Judgement	Sufficiency
Achievement	Solve equations.	1(a)	$x = 7$	**A1**	Or equivalent. "7" must be identified as the answer.	**Achievement:** Part 1 2 of code **A1**. **AND** Part 2 2 of code **A2**.
		1(b)	$x = \frac{-9}{4}$ or -2.25	**A1**	Or equivalent.	
		1(c)	$x = 0$ or $x = -4$	**A1**	Both solutions needed.	
	Use straightforward algebraic methods.	2	$3x^2 - 7x + 2$	**A2**	No alternative	
		3	$\frac{3x^2}{4}$	**A2**	Or equivalent. Eg $\frac{9x^2}{12}$, $0.75x^2$, etc	**Replacement evidence *could* be found in:** 6, 7 or 8 for any part and 5 for **A2** only.
		4	$F = 6 \times (6 + 1) \div 2 = 21$	**A2**	Or equivalent.	
Achievement with Merit	Use algebraic methods and solve equations in context.	5	$\frac{(x+5)(x+2)}{x+2}$ $= x+5$	**M**	**A2** for **f**actorising. Or equivalent. CAO is **M (**or **A2)**	**Merit:** Achievement **PLUS** 2 of code **M** **OR** 3 of code **M**.
		6	$x + 2x = 97$ $3x = 97$ $x = 32.333\ldots$ Peter must have at least 65 CDs.	**M**	CAO is **M** or (**A1**) **A2:** for solved with algebraic working shown Accept: The most Mary can have is 32.	
		7	8 classical CDs	**M**	CAO is **M (**or **A1)** Solved with working **(A2)**	**Replacement evidence:** 8 for 5, 6 or 7

Achievement with Excellence	Use algebraic strategies to investigate and solve problems.	8	If x is the number of years $(x + 5)(x + 9) = 725$ $x^2 + 14x + 45 = 725$ $x^2 + 14x – 680 = 0$ $(x + 34)(x – 20) = 0$ $x = –34, 20$ Since x has to be positive, the number of years is 20 **OR** If J is James age $J(J + 4) = 725$ $J^2 + 4J = 725$ $J^2 + 4J – 725 = 0$ $(J + 29)(J – 25) = 0$ $J = –29, 25$ Since J has to be positive, James will be 25 hence the number of years is 20 **OR** If J is James & E is Emma's age, solve sim eq $J \times E = 725$ <u>and</u> $E = J + 4$	**E**	CAO (ie 20) is **A1** A relevant correctly solved equation (or pair of simultaneous eqs) is evidence for either **A1 OR A2 OR M**. A relevant equation (or pair of simultaneous eqs) is formed and its positive solution used to find the number of years. Algebraic statements: eg $J(J+4) = 725$ or $J \times E = 725$ <u>and</u> $E = J + 4$ with substitution or trial and error leading to the correct response are sufficient for **E.** Without algebra, **A1.**	**Excellence:** Merit **PLUS** code **E**.

Judgement Statement

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

Achievement	Achievement with Merit	Achievement with Excellence
Solve equations. Use straightforward algebraic methods. $2 \times$ A1 *and* $2 \times$ A2	Use algebraic methods and solve equations in context. Achievement *plus* $2 \times$ M **OR** $3 \times$ M	Use algebraic strategies to investigate and solve problems. Merit *plus* $1 \times$ E