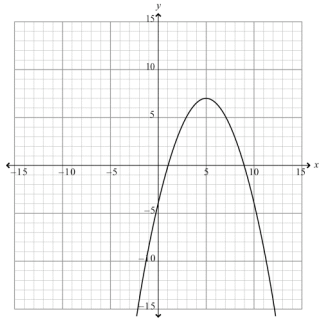
Assessment Schedule – 2008

Mathematics: Demonstrate an understanding of the features of graphs (90800)

Evidence Statement

	Achievement Criteria	No	Evidence	Code	Judgement	Sufficiency
ACHIEVEMENT	Demonstrate an understanding of the features of graphs.	1(a)	The *y*-intercept represents the height the ball was originally dropped from.	A	Or equivalent.	**2 × A**
		(c)	NO: Gradient for Brendan's ball = –8~10(cm/bounce) and Bronwyn's is –7~8 …	A	Answer to question must be justified by reference to gradient or equivalent concept. Accept calculation of the gradients to be the same.	
			… which shows that Brendan's claim is incorrect.	M	Correct interpretation of gradient results.	

	Achievement Criteria	No.	Evidence		Judgement	Sufficiency
ACHIEVEMENT WITH MERIT	Demonstrate an understanding of the relationship between functions and the features of their graphs.	1(b)	Domain (1 to 13) OR range (0 to 100) indicated.	A	Nebulous statements Accept intervals given as "positives" or equivalent statements.	**Achieved** **Plus 2 × M** **Or** **3 × M**
				M	Clear accurate statements of domain / range.	
		2(b)	Graph of parabola showing turning point (5,7), and passing through (2,3) and (8,3).	A	Or equivalent. Allow transposition of co-ordinates.	
			As above, but also shows correct *y*-intercept and *x*-intercepts. Graph with conditions stated in Judgement. 	M	Must be a smooth curve bearing in mind that it is not easy to draw. *x*-intercepts 1 and 9 (actually 1.03, 8.97) *y*-intercept –4 (actually –4.1)	
		3(a)	Equation of a parabola given	A		
			$h = -d(d-2)$ $h = -(d-1)^2 + 1$ $h = -d^2 + 2d$	M	Or equivalent.	
ACHIEVEMENT WITH EXCELLENCE	Determine and apply appropriate model(s) to solve graphical problem(s).	2(a)	Gradient = 4/3 $y = \frac{4x+1}{3}$ or 3y-4x-1=0	M E	Or equivalent, or consistent with graph in 2(b)	**Merit Plus 1 × E**
		2(c)	Equation of a parabola given	A		
			$y = -q(x-5)^2 + 7$	M	$q \neq -4/9$	
			$y = -\frac{4}{9}(x-5)^2 + 7$ $y = -0.44x^2 + 4.4x - 4.1$	E	Or equivalent.	
		3(b)	*y*-shift is –0.2 m or –20 cm $y = -(x-(1+b))^2 + 0.8$	A	Or equivalent method shown (CAO scores A)	
			(2,0) lies on the curve $(1-b)^2 = 0.8$ $1 - b = \pm 0.89$ $b = 1.89$	M E		

Judgement Statement

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate an understanding of the features of graphs. $2 \times A$	Demonstrate an understanding of the relationship between functions and the features of their graphs. Achievement plus $2 \times M$ Or $3 \times M$	Determine and apply appropriate model(s) to solve graphical problem(s). Achievement with 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.