

**Assessment Schedule – 2007**

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

**Evidence Statement**

	Assessment Criteria	Q. No	Evidence	Code	Judgement	Sufficiency
<b>ACHIEVEMENT</b>	Demonstrate an understanding of the features of graphs.	1a	The $d$ -intercept = 200 shows the distance between Lynda's home and the ice cream shop.	A	Or equivalent.	<b>ACHIEVEMENT:</b> THREE A's
		1b	<p>The graph shows two lines representing distance from an ice cream shop over time. The x-axis is 'Time (mins)' from 0 to 8, and the y-axis is 'Distance (m)' from 0 to 400. Lynda's Walk (blue line with diamonds) starts at (0, 200) and reaches 0 distance at 4 minutes. Ruth's Walk (pink line with squares) starts at (0, 300) and reaches 0 distance at 6 minutes.</p>	A	Or equivalent.	
		1c	Ruth would take 2 min longer.	A	Or consistent.	
		1d	Lynda's line would be twice as steep Lynda's line would have a lower x-intercept	A	Allow consistent treatment of Ruth's line.	
		4a	$y$ -intercept occurs when $x = 0$ $y = 0$ when $x = -\frac{1}{2}$ or 7 Lands $9.5 - 7 = 2.5$ m from Richard	A		

	Assessment Criteria	Q. No	Evidence	Code	Judgement	Sufficiency
ACHIEVEMENT WITH MERIT	Demonstrate an understanding of the relationship between functions and the features of their graphs.	2		A/M	Curve must be smooth.	<b>ACHIEVEMENT WITH MERIT:</b>  Achievement <b>plus</b>  TWO M's  <b>OR</b>  THREE M's
		3	<p style="text-align: center;"><b>Total DVD's in Collection</b></p> <p>Dan's number exceeds Sara's number of DVD's, for the first 5 months (or up to 6 months)</p>	M		
		4b	$y = a(7 - x)(2x + 1)$	M		
ACHIEVEMENT WITH EXCELLENCE	Determine and apply appropriate model(s) to solve graphical problem(s)	4c	$y = a(7 - x)(2x + 1)$ where the maximum height $\leq 2.15$ maximum occurs halfway between $x$ -intercepts $x = 3.25$ Solve $2.15 = a(7 - 3.25)(2(3.25) + 1)$ $2.15 = 28.125a$ $a = 0.076$ $0 < a < 0.076$	E	Accept solutions without the range statements.	<b>ACHIEVEMENT WITH EXCELLENCE:</b>  Merit <b>plus</b> E  OR Achieved <b>plus</b> 3 M's

## Judgement Statement

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate an understanding of the features of graphs.  $3 \times A$	Demonstrate an understanding of the relationship between functions and the features of their graphs.  <b>Achievement plus</b> $2 \times M$ <i>or</i> $3 \times M$	Determine and apply appropriate model(s) to solve graphical problem(s).  <b>Merit plus</b> $1 \times E$ <i>or</i> $3 \times A$ plus $3 \times M$

The following Mathematics-specific marking conventions may also have been used when marking this paper:

- Errors are circled.
- Omissions are indicated by a caret ( $\wedge$ ).
- **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.