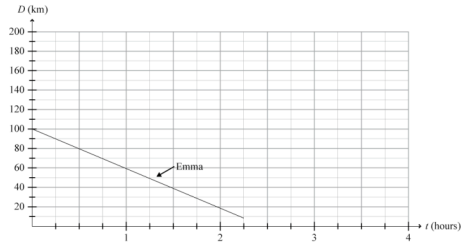
Assessment Schedule – 2008

Mathematics: Sketch and interpret graphs (90148)

Evidence Statement

	Achievement Criteria	No	Evidence	Code	Judgement	Sufficiency
Achievement	Sketch graphs.	1(a)	Speed = 180 ÷ 3 = 60 km / h	A2	Units not required anywhere in the paper.	**Achievement:** 2 × A1and 2 x A2s
		1(b)	David by 20 km	A2	No alternative.	
		1(c)	A specific comparison of time taken. OR A specific comparison about speed. OR A general comparison of both time and speed.	A2		
	Interpret features of graphs.	1(d)		A1	Straight line, *D*-intercept 100, *x*-intercept 2.5, gradient –40.	
		2(a)		A1	Key graph features are required: (a) straight line, *y*-intercept 1 and gradient 2.	
		2(b)		A1	(b) Smooth, symmetric curve, vertex (0,–9), *x*-intercepts ± 3.	
Achievement with Merit	Sketch, and interpret features of, graphs.	1(e)	AB D = 180	A2/M3	Or equivalent.	**Achievement with Merit:** Achievement **plus** 6 × M1and M2 and M3 with at least one of each
			BC D = –80 *t* + 200	A2/M3	Or equivalent.	
	Write equations for linear graphs.	2(c)		A1/M1	The key graph features are required: • straight line, y-intercept 4 and *x*-intercept –5.	
		2(d)		A1/M1	• smooth, symmetric curve, vertex (2,4), *x*-intercepts 0,4.	
		2(e)		A1/M1	• smooth, symmetric curve, vertex (2,–9), *x*-intercepts –1,5; yintercept –5.	
		3	$y = 3x - 1$	A2/M3	Or equivalent.	
		4(a)	3 years	A2/M2	Or equivalent.	
		4(b)	$6	A2/M2	Or equivalent.	
		4(c)	6 years	A2/M2	Or equivalent.	

Achievement with Excellence	Determine and apply an appropriate model for a situation involving graphs.	5	All cars → 100% This gives equation: $y = ax^2 + 100$ Using the point (5,0) $0 = 25a + 100$ $a = -4$ $y = -4x^2 + 100$ Solve for $y = 50$: $50 = -4x^2 + 100$ to get $x = 3.53$ years	 M3 M2 / E	The equation is required for excellence. The equation is needed for M3. Or equivalent.	**Achievement with Excellence:** Merit **plus** code E

Judgement Statement

Achievement	Achievement with Merit	Achievement with Excellence
Sketch and interpret features of graphs. $2 \times$ A1 plus $2 \times$ A2	Sketch and interpret features of graphs. Write equations for linear graphs. Achievement plus 6 of M1, M2 or M3 with at least 1 of each.	Determine and apply an appropriate model for a situation involving graphs. 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.