32406 Numeracy Assessment Schedule

June CAA 1, 2023

Outcomes

Outcome 1	Outcome 2	Outcome 3
Formulate mathematical and statistical approaches to solving problems in a range of meaningful situations.	Use mathematics and statistics to meet the numeracy demands of a range of meaningful situations.	Explain the reasonableness of mathematical and statistical responses to situations.

Notes

Given the platform is digital, allow for typos where it can be reasonably inferred the candidate is correct based on what else is recorded. Allow for minor errors, such as miscounting, if the argument is strong and assumes that error in the answer. Accept reasonable rounding, even in situations where money amounts are given to 3dp. In the case of typos and minor errors, take a position that favours the candidate.

Ignore extraneous information that does not add to an answer, but regard contradictions in an argument as incorrect.

Evidence

Question	Answer/Judgement	Outcome		
		1	2	3
1a	**8 × $22.70 + 10** = $191.60 (Any equivalent calculation accepted. Answer, $191.60 is not required). Ignore 'running arithmetic' that disregards equality. Accept 8 x 22.70 + 20 = $201.60 as candidate counts two-way travel. Do **not** accept just 8 x 22.70.	✓		
1b	$27.30 ÷ 1.5 = **$18.20** per hour (Answer only required). Accept $27 ÷ 1.5 = **$18.00** (rounding).		✓	
1c	$\frac{3}{4} \times 5 \times 2.76$ = **$10.35** (Answer only required).		✓	
1d	In the range 60,000 to 70,000. Accept also if students record each occupation separately, possibly with a '+' or ',' sign or 'and' as this shows correct reading of the scale. (About 39,500 '+' 26,500).		✓	
1e	At least 2 angles correct: 90º, 60º, 45º in the correct order.	✓		
1f	Must justify a position. Finds area of deck 8 × 2 = 16 m^2 (Note that superscript for 'square metres may not be used, and ^2 or words used instead – all accepted). Calculates 16 × 11.5 = 184 linear metres. Assume units if numbers are correct. Yes, she is correct – it is *about/just under* 190. (Or 'no', as it is not exactly 190, or allowing for wastage.)			✓
1g	$1\frac{1}{3} \times 33 \times 10$ = **$440**. Accept if student uses 1.3 × 33 × 10 = **$429.** Accept if student uses 1.33 × 33 × 10 = **$438.90.** Accept if student uses 1.333 × 33 × 10 = **$439.89.** Accept rounding of answer to dollars**, e.g., $429 to $430, or $438.90 to $438 or $439.**	✓		

1h	Must make a comparative statement between the groups (Y11 and Y13). Any legitimate position accepted but must be supported by evidence of correct reading from the graph. Numbers used in justification can be: • Year (Most likely position in 2023) coupled with reference to percentage or difference between percentages for Y11 and Y13. • Trend that references percentages, possibly only to one or two years. • Specific points referring to both values (year and percentage) • Accurate use of percentages but years can be reasonably inferred. Do **not accept** totalling percentages or treating percentages as numbers of people.			✓

2a	$\frac{6}{14}$ or $\frac{3}{7}$ or 0.4286 or 42.86% (allow for rounding).	✓		
2b	**d (4th option).** 200 ÷ 10	✓		
2c	**32%**		✓	
2d	69 – 70 times heavier.	✓		
2e	7,000 – 7,500 votes.		✓	
2f	Must take a position and give numbers from the graph to support their answer. About 210 in 2022 and about 52 in 1994 (Rounding to 200 – 220 and 50-55 allowed). Uses those numbers to justify position, for example: Agree – 200 is four times 50. Disagree – 52 in 1994 and 210 in 2022 so not exactly four times as many.			✓
2g	**b. (Option 2)** 7,000 m		✓	

3a	Height: 1,700 mm – 2,100 mm. Accept answers in other units if given.	✓		
3b	**22** × **7 or 7** × **22** = 154. Must show the working. Answer only **not** accepted.	✓		
3c	**E**		✓	

4a	6 ÷ 8 = **0.75** m (Answer only required). No rounding accepted, e.g., 0.8.	✓		
4b	135º		✓	
4c	$248		✓	
4d	The supporting argument should clearly state what is being found by each calculation of Rob's working, i.e., connect to the geometric shapes. 1.72 × 1.72 = 2.96 m^2 gives the area of the square than includes the octagon. 2 x (0.5 × 0.5) = 0.5 m^2 gives the combined area of the four triangles (or corners). 2 x is significant because corners are half a square. 2.96 – 0.5 = 2.46 m^2 gives the removal of the corners. Do **not accept** rewording of the calculations given.			✓
4e	0.8 × 1000 = 800 litres 800 ÷ 25 = 32 bags (Only **32** × 25L bags is required).	✓		
4f	Rob is incorrect. His ratio of white to purple is 9:16. The student may use any valid argument to show the ratios are not equivalent. For example: **Percentages:** 2:3 is 40% white and 60% purple. 9:16 is 36% white and 64% purple. **Ratios:** 2:3 = 18:27 and 9:16 = 18:32 so not equivalent (finding a common measure). 9:16 cannot be simplified (no common factor) so cannot be equivalent to 2:3.			✓

	2:3 can be copied repeatedly but that leaves 1:4 which is not 2:3. **Unit rate:** 2:3 = 1:1.5 (1 white to 1.5 purple). 9:16 = 1: 1.77…) so not equivalent.			

5a	$229.65 or $229.64 (Accept rounding to whole number of dollars, $229 or $230 and rounding to $229.60 or $229.70).	✓		
5b	$49,672.35 (Allow 49,000 – 50,000)	✓		
5c	Must use information from the graph to justify their position with reference to 1/3. For example: 79 muffins were chocolate. 79/240 = 0.329 … which is very close to one third ($0.\dot{3}$). Other calculations might be used to agree or disagree with the claim, such as: 80/240 = 1/3 and 79 is close to 80 so accept claim or reject claim because 79 is less than 80.			✓
5d	$1.44 (accept $1.40 – $1.50 range).		✓	
5e	28 cm and 42 cm (accept either way around).		✓	
5f	**F** (Bottom right)	✓		

End of Assessment Schedule