



Year 8 (2022)

Mathematics

Assessment Task Notification

Term 2 Common Examination

Date	Week 5A - Monday 23/05/2022 & Tuesday 24/05/2022																																
Classes Assessed	<p>Compulsory for:</p> <table border="0"> <thead> <tr> <th colspan="2">Monday 23/05/2022</th> <th colspan="2">Tuesday 24/05/2022</th> </tr> </thead> <tbody> <tr> <td>8MATB (Ms Ibrahim)</td> <td>Period 4</td> <td>8MATG (Mr Smithard)</td> <td>Period 2</td> </tr> <tr> <td></td> <td></td> <td>8MATP (Ms Attaalla)</td> <td>Period 2</td> </tr> <tr> <td></td> <td></td> <td>8MATO (Mrs Ibrahim)</td> <td>Period 2</td> </tr> <tr> <td></td> <td></td> <td>8MATI (Mr Salame)</td> <td>Period 3</td> </tr> <tr> <td></td> <td></td> <td>8MATR (Mr Salame)</td> <td>Period 2</td> </tr> <tr> <td></td> <td></td> <td>8MATY (Mr Mansouri)</td> <td>Period 2</td> </tr> <tr> <td></td> <td></td> <td>8MATV (Ms Hui)</td> <td>Period 4</td> </tr> </tbody> </table>	Monday 23/05/2022		Tuesday 24/05/2022		8MATB (Ms Ibrahim)	Period 4	8MATG (Mr Smithard)	Period 2			8MATP (Ms Attaalla)	Period 2			8MATO (Mrs Ibrahim)	Period 2			8MATI (Mr Salame)	Period 3			8MATR (Mr Salame)	Period 2			8MATY (Mr Mansouri)	Period 2			8MATV (Ms Hui)	Period 4
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Weighting	25% of Year 8 Mathematics Assessment																																
Examination Details	<p>Read the following details carefully and write them into your diary.</p> <p>Duration: 50 minutes</p> <p>Format: Calculator</p> <p>Venue: Classrooms</p>																																
Equipment Required	<ul style="list-style-type: none"> Blue and/or black pen Lead pencil, eraser and ruler Board-approved scientific calculator <p>Note:</p> <ul style="list-style-type: none"> No borrowing of equipment will be permitted. A reference sheet will be provided for this examination. No handwritten summaries will be permitted. 																																
Marking Criteria	<ul style="list-style-type: none"> All questions should be attempted. All questions are worth 1 mark unless otherwise indicated. To obtain full marks, answers must be completely correct and all necessary working must be shown. Some marks may be awarded for partially correct answers. Trivial attempts will be counted as a non-attempt and may result in an official warning letter being issued. 																																
Absentee Procedures	<p>If you are absent on the day of this examination, upon your return to school you must present a medical certificate to your class teacher or the head teacher explaining your absence, otherwise a mark of zero may be awarded. You will be required to sit for your examination on the first day you return to school.</p>																																

Year 8 Term 2 Common Test

The following table lists all the Stage 4 outcomes, knowledge and numeracy skills that will be assessed in this assessment task.

Strands	Assessment Outcomes
Number & Algebra	<p>MA4-10NA Uses algebraic techniques to solve simple linear and quadratic equations.</p>
Measurement & Geometry	<p>MA4-12MG Calculates the perimeters of plane shapes and the circumferences of circles.</p> <p>MA4-2WM Uses formulas to calculate the areas of quadrilaterals and circles and converts between units of area.</p> <p>MA3-9MG Selects and uses the appropriate unit and device to measure lengths and distances, calculates perimeters and converts between units of length.</p> <p>MA3-10MG Selects and uses the appropriate unit to calculate areas, including areas of squares, rectangles and triangles.</p> <p>MA4-12MG Calculates the perimeters of plane shapes and the circumferences of circles.</p> <p>MA4-13MG Uses formulas to calculate the areas of quadrilaterals and circles and converts between units of area.</p> <p>MA4-16MG Applies Pythagoras' theorem to calculate side lengths in right-angled triangles and solves related problems.</p>
Working Mathematically	<p>MA4-1WM Communicates and connects mathematical ideas using appropriate terminology, diagrams and symbols.</p> <p>MA4-2WM Applies appropriate mathematical techniques to solve problems.</p> <p>MA4-3WM Recognises and explains mathematical relationships using reasoning.</p>
Textbook Chapters	<p>Cambridge 8 Mathematics & Cambridge 8 NSW Mathematics Gold</p> <p>Chapter 2: Equations</p> <p>Chapter 3: Measurement and Pythagoras' Theorem</p>

Equations 2

Unknown

$$\begin{array}{l} 2x + 5 = 8 \\ \downarrow -5 \\ 2x = 3 \\ \downarrow \div 2 \\ x = \frac{3}{2} \end{array}$$

Equation Solving

Solution

Equivalent equations stay balanced

$$\begin{array}{l} 5x + 1 = x + 9 \\ \downarrow -x \\ 4x + 1 = 9 \\ \downarrow -1 \\ 4x = 8 \\ \downarrow \div 4 \\ x = 2 \end{array}$$

Equations with fractions

$$\begin{array}{l} \frac{5x}{3} = 4 \\ \downarrow \times 3 \\ 5x = 12 \\ \downarrow \div 5 \\ x = \frac{12}{5} \end{array}$$

$$\begin{array}{l} 9 - \frac{2a}{3} = 6 \\ \downarrow -9 \\ -\frac{2a}{3} = -3 \\ \downarrow \times 3 \\ -2a = -9 \\ \downarrow \div -2 \\ a = \frac{9}{2} \end{array}$$

$$\begin{array}{l} \frac{3k-2}{5} = -2 \\ \downarrow \times 5 \\ 3k - 2 = -10 \\ \downarrow +2 \\ 3k = -8 \\ \downarrow \div 3 \\ k = -\frac{8}{3} \end{array}$$

Solving simple quadratic equations

If $x^2 = c$ then:

- If $c > 0$, $x = \sqrt{c}$ or $x = -\sqrt{c}$
e.g. $x^2 = 16$ gives $x = \pm 4$
- If $c = 0$ then $x = 0$ with one solution.
- If $c < 0$ then there are no solutions for x .

Formulas rules, relationships

$$P = 2\ell + 2w$$

↑ ↑ ↑
subject pronominals

Equations with brackets

Expand brackets
Collect like terms

$$\begin{array}{l} 5(2x - 3) + 8 = 6x - 19 \\ 10x - 15 + 8 = 6x - 19 \\ 10x - 7 = 6x - 19 \\ \downarrow -6x \\ 4x - 7 = -19 \\ \downarrow +7 \\ 4x = -12 \\ \downarrow \div 4 \\ x = -3 \end{array}$$

Distributive law

$$a(b + c) = ab + ac$$

Pronumerals with negative coefficients

$$\begin{array}{l} -x = -3 \\ \downarrow \times -1 \\ x = 3 \end{array}$$

$$\begin{array}{l} -5x = -2 \\ \downarrow \times -1 \\ 5x = 2 \\ \downarrow \div 5 \\ x = \frac{2}{5} \end{array}$$

$$\begin{array}{l} 3 - a = 5 \\ \downarrow -3 \\ -a = 2 \\ \downarrow \times -1 \\ a = -2 \end{array}$$

$$\begin{array}{l} \frac{6-2a}{-3} = 8 \\ \downarrow \times -3 \\ 6 - 2a = -24 \\ \downarrow -6 \\ -2a = -30 \\ \downarrow \div -2 \\ a = 15 \end{array}$$

Problem solving with equations

- Pronumerals: use words to explain
- Rule: starts with word or pronominal, has = sign
- Solve: state solution
- Sentence answer with units

An orange costs 5c more than an apple. An orange and an apple together cost \$1.15. Determine the cost of each.

Cost of apple = x
Cost of orange = $x + 5$
Total = $x + x + 5$
 $2x + 5 = 115$
 $2x = 110$
 $x = 55$
Apples cost 55 cents each. Oranges cost 60 cents each.

