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| Australian Curriculum Year 8 Sample assessment Mathematics | Task-specific standards — continua  Pete’s Paving | Name |
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**Purpose of assessment:** To use algebraic equations and graphs to simplify paving quotes, and to apply and evaluate the methods used.

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| Understanding and Skills | | | | | | | |  |
| Understanding & Fluency | | | | Problem solving & Reasoning | | | |  |
| Writing equations to connect the length of the design of the paved areas to the numbers of pavers and lengths of timber (Q1, 2). Expanding and simplifying algebraic expressions to develop a linear equation (Q3).  Plotting a linear relationship and reading a graph (Q4, 5, 6). | | Using mathematical language, symbols and conventions when writing and using equations, plotting graphs and writing explanations (Q1–9). | | Applying a strategy to justify the cost of the 15 m path (Q7) and to prepare a paving quote (Q9). | | Justifying and evaluating the choice of a preferred costing method (Q8).  Describing modifications to the method in a particular application (Q10). | |  |
| Writing equations to connect the length of the design of the paved areas to the numbers of pavers and lengths of timber. Development of a linear equation to calculate the cost (c) of the work from the length (l) of the straight path.  Accurate and efficient use of a linear equation to plot a line graph and find the correct cost of a 15 m path. | Consistent use of appropriate conventions and symbols when writing equations and plotting a graph. Consistent use of appropriate mathematical language in explanations. | |  | Successful application of a strategy to mathematically justify the cost of the 15 m path and prepare an accurate paving quote. | Clear justification for a choice of costing method and a clear explanation of practical disadvantages.  Clear explanation of modifications to the method. | |  | A |
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|  |  | |  |  |  | |  | B |
| Description of a method for finding the number of pavers or lengths of timber. |  | |  |  |  | |  |
| Identification of the number of pavers and lengths of timber for Design 1 and Design 2. Recognition of a pattern for finding the number of pavers or lengths of timber. | Use of conventions and symbols when writing equations and plotting a graph. Use of mathematical language in explanations. | |  | Some justification of the cost of the 15 m path. Application of a strategy to prepare a paving quote. | Discussion of a choice of costing method and statement of a possible disadvantage.  Description of a modification to the method. | |  | C |
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|  |  | |  | Application of a strategy to partially prepare a paving quote. |  | |  | D |
|  | Use of some conventions and symbols and mathematical language. | |  |  |  | |  |
| Statement about the number of pavers or lengths of timber for Design 1 or Design 2.  Attempted use of procedures to plot a graph. | Use of everyday language. | |  |  | Isolated statements about the costing method. | |  | E |
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