

# Assessment highlights insights

from Robyn McNamara, Principal Education Officer for General Mathematics

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## Q Why was this student response selected for Assessment highlights?

A This student response is an informative statistical report that analyses the relationship between driving speed and stopping distance in various driving conditions to provide a recommendation for safe driving speed. While the context and findings are relevant to all drivers, they are considerably important for beginning drivers.

## Q How has the student effectively responded to the school's assessment instrument and demonstrated the qualities of the top performance-level descriptors (PLD) of the instrument-specific marking guide?

A Ronin has documented appropriate assumptions and relevant observations by providing evidence for statements, such as website references. All relevant mathematical concepts and techniques are identified before use, including appropriate technology, and these are accurately applied in a discerning manner to reach a valid solution. Throughout the report, the student has justified decisions made using mathematical reasoning and evaluated the reasonableness of solutions by considering results, assumptions and observations. Relevant strengths and limitations of the model are documented with the support of decisive information and citations. The coherent and concise report, with a suitable introduction, body and conclusion, is developed using correct technical and procedural vocabulary and conventions.

## Q What were the qualities or features of the student's response that made it stand out from other student responses?

A Section 1 provides documented observations and assumptions related to sample size, stopping distance, driving speeds, road conditions and external factors, such as vehicle type and effect of friction.

Section 2 succinctly describes the calculations and technology used to develop appropriate linear regression equations and scatterplots that model the relationship between driving speed and stopping distance for each location. Calculated statistical measures, equations, graphs and tabulated data are clearly and consistently labelled. Extracts from spreadsheets, including the formulas used, are inserted as evidence in the body of the report.

Section 3 discusses findings for dry road and wet road conditions in separate paragraphs, using summary statements that are supported by mathematical results and reasoning, and provides a recommendation for safe driving speed.

Section 4 evaluates the reasonableness of solutions obtained by documenting strengths and limitations of the linear regression models.

Section 5 concludes the aim, findings and limitations of the investigation.

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