Stage 5 Mathematics student work sample – Grade D

1. I can understand and use the trigonometric ratios (sine, cosine and tangent) in right-angled triangles:

\[
\text{Sine} = \frac{\text{opposite } \theta}{\text{hypotenuse}}
\]

\[
\text{Cosine} = \frac{\text{adjacent } \theta}{\text{hypotenuse}}
\]

\[
\text{Tangent} = \frac{\text{opposite } \theta}{\text{adjacent } \theta}
\]

States the three trigonometric ratios correctly in terms of the sides of a right-angled triangle

Draws right-angled triangles and names the sides appropriately in relation to the angle to be found

Determines correctly the values of trigonometric ratios of angles in right-angled triangles
Grade Commentary

Drew demonstrates basic knowledge and understanding of trigonometry in relation to right-angled triangles. The three trigonometric ratios are stated correctly in terms of the sides of a right-angled triangle, but there is no evidence of the use of the ratios to calculate the lengths of sides or the size of angles. An attempt is made to construct an appropriate practical problem, but it does not use terminology associated with trigonometry or use trigonometry in its solution. Examples of complete solutions using each of the trigonometric ratios, including finding the lengths of sides and the size of angles, and the construction of practical problems involving angles of elevation/depression and bearings, would enhance the response.

Drew’s response demonstrates characteristics of work typically produced by a student performing at a grade D standard.