2014 Notes from the Marking Centre –Mathematics General 2

Introduction

This document has been produced for the teachers and candidates of the Stage 6 Mathematics General 2 course. It contains comments on candidate responses to particular parts of the 2014 Higher School Certificate examination, highlighting candidates' strengths and indicating where they need to improve.

This document should be read along with:

- the Mathematics General 2 Stage 6 Syllabus
- the 2014 Higher School Certificate Mathematics General 2 examination
  the marking guidelines
- Advice for students attempting HSC mathematics examinations
- Advice for HSC students about examinations
- other support documents developed by the Board of Studies, Teaching and Educational Standards NSW to assist in the teaching and learning of Mathematics in Stage 6.

Question 26

Candidates showed strength in these areas:
- expanding algebraic expressions (part a)
- using the sine ratio to find a side length (part b)
- solving contextual problems involving linear models (part f)
- calculating time differences between locations on Earth given the difference in longitude (part g).

Candidates need to improve in these areas:
- solving linear equations involving multiple steps (part c)
- solving simple linear simultaneous equations (part d)
- determining the median given a cumulative frequency histogram (part e).

Question 27

Candidates showed strength in these areas:
- calculating principal, interest and repayments for flat rate loans (part aii)
- calculating the cost of purchasing comprehensive insurance for a motor vehicle (part aii)
- calculating the cost of fuel used on a trip (part b).

Candidates need to improve in these areas:
- calculating the cost of stamp duty payable (part ai)
- describing the type of insurance (part aiv)
- calculating the volume of water held by a tank of a specific shape and size (part c).

Question 28

Candidates showed strength in these areas:

- calculating the financial expectation (part a)
- using true bearings in solving a problem related to a radial compass survey (part b)
- calculating the scale used on a diagram from a specific dimension (part di)
- calculating a measurement from a scale diagram (part dii).

Candidates need to improve in these areas:
- using the cosine rule to find side length of a triangle (part bii)
- calculating the area of a triangle using the formula: $A = \frac{1}{2} ab \sin C$ (part biii)
- estimating the volume of a swimming pool using two applications of Simpson's Rule (part diii).

Question 29

Candidates showed strength in these areas:

- completing a table of values
- graphing and recognising the relationship between two variables (parts aii, aiii)
- calculating and interpreting blood alcohol content (BAC) based on drink consumption and body mass (part b)
- constructing a box-and-whisker plot from a 5-number summary (part ci).

Candidates need to improve in these areas:
- recognising the limitations of models (part aiv)
- comparing the summary statistics for two sets of data, and interpreting the skewness of distributions (part ciii).

Question 30

Candidates showed strength in these areas:
- calculating the present value using the appropriate formula (part a)
- calculating the interquartile range (part bii)
- identifying outliers in data sets (part b).

Candidates need to improve in these areas:

- determining the equation of the least-squares line of best fit (part bv)
- drawing the least-squares line of best fit (part bvi)
- interpolating from plotted data to make predictions (part bvii)
- interpreting given graphs and statistics, including critically evaluating their usefulness in making predictions (part bviii).