

Analysis of candidates' responses

QUESTION 1

- 1.1 Candidates did not know how to substitute points into the formula. They were confused between the midpoint and gradient formulas.
- 1.2 Candidates tried to prove that lines were perpendicular, instead of bisecting each other.
- 1.3 Many candidates calculated that $AB = BC$ to prove the angle to be 90° .
- 1.4 Obvious fault in Afrikaans. Candidates are not familiar with the properties of quadrangles.
- 1.5 Rounding-off problem. Candidates did not realise that the angle should be obtuse.
- 1.6 Justification of answers was a problem.

QUESTION 2

- 2.1 Problem that 169 was used in 2.1 and 2.7. Candidates did not realise that the centre was $(0; 0)$. Also, they put $x^2 + y^2 = 13$, not 169.
- 2.4 Candidates do not seem to know how to explain clearly.
- 2.7 Should have changed the radius in 2.1. Candidates could often not distinguish between the x and y values, also not which value was represented by a or b, or which set of co-ordinates represented the midpoint.

Candidates either got most of these marks or very few marks, nothing in the middle. It was clear that the work had not been taught in many centres.

QUESTION 3

- 3.1.1 Not well answered. It was a fairly easy question, but candidates confused signs.
- 3.1.2 Once again signs were confused.
- 3.2.2 Most candidates reflected in the x-axis. Poorly answered. Candidates were not clear on different rotations. Many candidates did not have the ability to see where the new images would be. Teachers must stress that candidates must study the rules. Candidates should also concentrate on figures, and not only on points.
- 3.2.5 Candidates did not understand the concept *ratio*, although they understood the *scale factor squared* concept. Ratios are done in the junior grades, but Grade 12 teachers must ensure that candidates understand the concept.

Transformation Geometry is a new section, and as a result the basic concepts were not generally understood. This is easy work where candidates could have scored high marks, but that was not the case.

QUESTION 4

This was a new section which had obviously not been properly taught.

QUESTION 5

- 5.1.1 Signs were problematic. Many candidates used calculators and thus lost 4 of the 6 marks. Some centres had not taught their candidates to re-write the angles to acute angles before using the triangles.
- 5.2 $\sin^2(360-x)$ problematic with signs.

QUESTION 6

Trig is still a big problem.

- 6.1.1 The majority of the candidates knew that \tan is \sin/\cos and $\sin 2x = 2\sin x \cos x$. However, they lacked algebraic skills and could not see the link between algebra and trigonometry.
- 6.1.2 The first few steps were poorly done. Once again, owing to lack of algebraic skills. Candidates knew how to get reference angles and to work in the different quadrants. Teachers must stress that k is an element of Z .
- 6.2.1 Most candidates sketched in the wrong quadrant. $p < 0$ confused them as they are used to having a number. The reading off of $\tan B$ was well answered. Candidates knew their ratio concepts.

QUESTION 7

- 7.1 – 7.3 Formulae proved to be a problem as candidates did not know how to use correct values.

QUESTION 8

- 8.1 Candidates had to give the general solution to enable them to get all the answers. Candidates must be taught to give general solutions at all times, and then they will get all the answers. Candidates can read off the values from the graph.
- 8.2 Although this is also tested in Paper 1, candidates did not know the influence of the parameters.
- 8.3 Interpretation of graphs is still a huge problem.

QUESTION 9

- 9.2 Not all candidates know how to do this calculation on the calculator.
- 9.3 The concept of *standard deviation* was not known to candidates – very poorly answered.

QUESTION 10

- 10.4 Candidates did not understand the question.

QUESTION 11

- 11.1 Candidates were careless with the plotting of points.

11.2 Drew curve in, but did not answer the question.

QUESTION 12

12.1 Candidates did not understand the difference between median and mean. They also do not understand quartiles.

12.2 Poorly answered. Candidates did not know IQR. Candidates must not only be taught to draw diagrams, but also how to interpret them.

12.3 Many candidates thought that the number of students differed in the different quartiles. The reasoning was poor, possibly on account of poor preparation – or even incorrect teaching. Skewness and extreme points need attention.