Grade10 Mathematics: Memorandum Paper 1

1.1 $0,09\dot{\dot{}}$ ✔ 1

1.2 $6^2 = 36$
$7^2 = 49$ ✔
$\sqrt{39}$ lies between 6 and 7 ✔ 2

1.3.1 $-3 < x \leq 4$ ✔ ✔ 2

1.3.2 -2 ✔ 1

1.4.1 $x(x-3)$ ✔ ✔ 2

1.4.2 $(2x+1)(x-3)$ ✔ ✔ 2

1.4.3 $x^2 - 1 - y - xy$
$= (x+1)(x-1) - y(x+1)$ ✔ ✔
$= (x+1)(x-1-y)$ ✔ ✔ 4

1.4.4 $(x+2)(x^2-2x+4)$ ✔ ✔ 2

1.5.1 $a = 2$ ✔ 1

1.5.2 A = (270°; -2) ✔ ✔ 2

1.5.3 360° 1

1.5.4 $y = 2\sin x + 1$ ✔ 1

2.1.1 $(x^2 - 4x + 4)(x+2)$ ✔
$= x^3 + 2x^2 - 4x^2 - 8x + 4x + 8$ ✔
$= x^3 - 2x^2 - 4x + 8$ ✔ 3

2.1.2 $\frac{5(x-3) - 2(2x+1)}{10}$ ✔ ✔
$= \frac{5x - 15 - 4x - 2}{10}$ ✔
$= \frac{x - 17}{10}$ ✔ 4

2.1.3 $\frac{2^{x+1}.3^{2x-1}}{(3^2 \times 2)^x}$ ✔
$= \frac{2^{x+1}.3^{2x-1}}{3^{2x}.2^x}$ ✔
$= 2^{x+1-x}.3^{2x-1-2x}$
$= 2.3^{-1} = \frac{2}{3}$ ✔ ✔ 4

2.2.1 $x^2 - x - 6 = 6$ ✔
$\therefore\ x^2 - x - 12 = 0$ ✔
$\therefore\ (x-4)(x+3) = 0$ ✔
$\therefore\ x = 4$ or $x = -3$ ✔ ✔ 5

2.2.2 $2^{2x+1} = 2^5$ ✔
$\therefore\ 2x + 1 = 5$ ✔
$\therefore\ 2x = 4$
$\therefore\ x = 2$ ✔ 3

3.1.1 R7,36 ✔ 1

3.1.2 10 ✔ 1

3.1.3 R600 ÷ 0,06472 ✔
≈ ¥ 9270 ✔
OR
R600 × 15,4504
≈ ¥ 9270 2

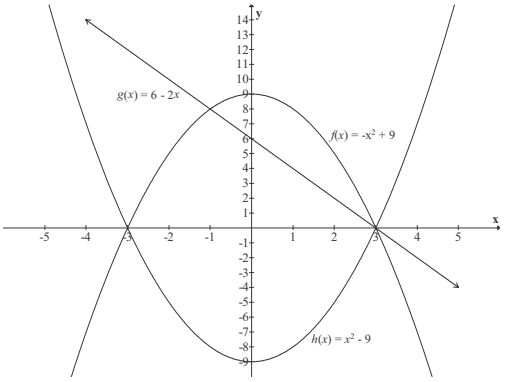
3.1.4 R600 ÷ 14,61 ✔
≈ £ 41 ✔
OR
R600 × 0,0684
≈ £ 41 2

3.2 $A = p(1+i)^n$ ✔
$i = 0,056 \div 12 = 0,00467$ ✔
$n = 3 \times 12 = 36$ ✔
$A = \text{R}5\,000(1 + 0,00467)^{36}$ ✔ ✔
= R5 913,08 ✔ 6

4.1 *B* lives closer to Johannesburg. ✔ The *y*-intercept of B is less than the *y*-intercept of A ✔ 2

4.2 *A* traveled faster. ✔ The gradient of graph *A* is steeper than the gradient of graph *B* ✔
A covered a greater distance in the same time as B ✔ 3

5.1.1



✔ ✔ ✔ for parabola
✔ ✔ ✔ for straight line 6

5.1.2 $-3 \leq x \leq 3$

5.1.3 *h(x)* on graph ✔ ✔ 2

5.1.4 $h(x) = x^2 - 9$ ✔ ✔ 2

5.2.1 $4 = a^2$ ✔
$2 = a$ ✔ 2

5.2.2 B = $(\sqrt{2}\ ;\ \sqrt{2})$ ✔ ✔ 2

5.2.3 C = (0;1) ✔ ✔ 2

5.2.4 D = (2;2) ✔ ✔ 2

5.2.5 (2:2) ✔ ✔ 2

5.2.6 $y > 0\ ;\ y \in \Re$ ✔ 1

6.1 $5^2 = 25$
$5^3 = 125$
$\therefore 2 < x < 3$ ✔
There must be some evidence of trial and error with the use of a calculator. ✔
$x \approx 2,7$ ✔ 3

6.2.1

Area	2	4	6	8	20	**82**
Number of matches	**7**	**12**	**17**	**22**	**27**	207
		✔		✔	✔	✔

4

6.2.2 $\frac{5}{2}(2n) + 2 = 5n + 2$ ✔ ✔ 2

7.1.1 264

7.1.2 572

7.1.3 693 ✔ 1

7.2 You insert the sum of the two digits of the two-digit number between the two numbers to get the answer. ✔ ✔ ✔ 3

7.3 Students' examples and justification of their conjecture. ✔ ✔ ✔ 3

7.4 $11 \times (10x + y) = 100x + 10(x+y) + y$ ✔ ✔
LHS: $110x + 11y$ ✔
RHS: $100x + 10x + 10y + y = 110x + 11y$ ✔ 4