



Name: _____ () Class: _____ Date: _____

Term 2 Additional Mathematics Test 1

Revision Paper 1

Answer all the questions.

- 1 Given that $\sqrt{64^x} = \frac{2^{1+9x}}{16}$, find the value of x and hence, $\sqrt{64^x}$ in the form $n\sqrt{2}$ where n is an integer. [4]
- 2 Solve the equation $\sqrt{7x+2} + 2x = 0$, explaining why you would or would not reject the solutions obtained. [4]
- 3 Given the area of a rectangle $ABCD$ is $(46 - 14\sqrt{7}) \text{ cm}^2$ and the length of the rectangle AB is $(10 + \sqrt{7}) \text{ cm}$. Find, without using a calculator,
- (i) the width of the rectangle BC and show that $BC = (6 - 2\sqrt{7}) \text{ cm}$, [3]
- (ii) the exact value of AC^2 in the form $(c + d\sqrt{7})$, where c and d are integers. [3]
- 4 Solve the simultaneous equations:
- $$5^y = 25^{x+\frac{3}{2}},$$
- $$y = 3x^2 - 5.$$
- [4]
- 5 (i) Express $y = -2x^2 + 12x - 11$ in the form $y = a(x+h)^2 + k$, where a , h and k are constants. [3]
- (ii) Sketch the graph of $y = -2x^2 + 12x - 11$, labelling the turning point, the line of symmetry and the y -intercept of the curve. [3]