Write your name here

Surname		Other names	

In the style of:
Edexcel GCSE

Centre Number

Candidate Number

Mathematics A
Surds and Indices

Higher Tier

Past Paper Style Questions
Arranged by Topic

Paper Reference
1MA0/1H

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser. Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need*.
- **Calculators must not be used.**

Information

- The total mark for this paper is 100
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*****) are ones where the quality of your written communication will be assessed.

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

1. Work out $(2+\sqrt{5})(2-\sqrt{5})$

Give your answer in its simplest form.

....

2. (a) Write down the value of $64^{\frac{1}{2}}$

....
(1)

(b) Write $\sqrt{45}$ in the form $k\sqrt{5}$, where k is an integer.

....
(1)

(Total 2 marks)

3. Find the value of

(i) 8^0

....

(ii) $64^{\frac{1}{2}}$

....

(iii) $\left(\dfrac{27}{8}\right)^{\frac{2}{3}}$

....

(Total 4 marks)

4. (a) Simplify $4x \times 5y$

....
(1)

(b) Simplify $x \times x \times x \times x \times x$

....
(1)

(c) Expand $4(3n - 7)$

....
(2)

(d) Expand and simplify $2(2x + 3) + 3(x + 1)$

....
(2)

(e) Simplify $n^2 \times n$

....
(1)

(f) Simplify $p^5 \div p^3$

....
(1)

(Total 8 marks)

5. (a) Simplify $\quad q^5 \times q^4$

....
(1)

(b) Simplify $\quad r^5 \div r^2$

....
(1)

(c) Simplify $\quad 12tv^6 \div 6tv^5$

....
(2)

(d) Simplify $\quad (9w^2 y^6)^{\frac{1}{2}}$

....
(2)

(e) For $y > 1$, write the following expressions in order of size.
Start with the expression with the least value.

$$y^0 \quad y^2 \quad y \quad y^{-2} \quad y^{\frac{1}{2}}$$

....

(2)

(Total 8 marks)

6. (a) Simplify $n^3 \times n^4$

....
(1)

(b) Simplify $q^7 \div q^3$

....
(1)

(c) Simplify $a^2 b^3 \times 3ab^2$

....
(2)

(Total 4 marks)

7. (a) Expand and simplify $3(a + 4) + 5(2a + 1)$

....
(2)

(b) Simplify $x^4 \times x^6$

....
(1)

(c) Simplify $y^8 \div y^5$

....
(1)

(d) Simplify $(z^4)^3$

....
(1)

(Total 5 marks)

8. (a) Simplify $v^6 \times v^2$

....
(1)

(b) Simplify $\dfrac{m^8}{m^3}$

....
(1)

(c) Simplify $(2y)^3$

....
(2)

(d) Simplify $3a^2h \times 4a^5h^4$

....
(2)

(Total 6 marks)

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