

Rationalising the Denominator

For Pearson Edexcel GCSE Mathematics (1MA1) • Higher tier

Name _____

Total marks: **21**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method. You must **not** use a calculator.

- 1** Rationalise the denominator of each fraction.
Simplify your answers.

(a) $\frac{5}{\sqrt{2}}$

.....
(2)

(b) $\frac{14}{\sqrt{7}}$

.....
(2)

(c) $\frac{3}{2\sqrt{6}}$

.....
(2)

(Total for Question 1 is 6 marks)

2 Show that $\frac{40}{\sqrt{8}} = 10\sqrt{2}$

(2)

(Total for Question 2 is 2 marks)

3 $\frac{\sqrt{3} \times \sqrt{15}}{\sqrt{5}}$
Simplify fully.

.....
(2)

(Total for Question 3 is 2 marks)

4 The area of a rectangle is 12 cm^2 .
The length of the rectangle is $\sqrt{6} \text{ cm}$.
Find the width of the rectangle.
Give your answer in the form $a\sqrt{b}$

..... cm
(2)

(Total for Question 4 is 2 marks)

- 5 Show that $3\sqrt{20} - \frac{15}{\sqrt{5}}$ can be written as $3\sqrt{5}$

(3)

(Total for Question 5 is 3 marks)

- 6 Express $\frac{1}{\sqrt{5}} + \frac{1}{\sqrt{20}}$ in the form $\frac{a\sqrt{5}}{b}$ where a and b are integers.

.....
(3)

(Total for Question 6 is 3 marks)

- 7 Express $\frac{(\sqrt{2})^5}{\sqrt{6}}$ in the form $\frac{a\sqrt{b}}{c}$ where a and c are integers and b is a prime number.

.....
(3)

(Total for Question 7 is 3 marks)
