RATIONALIZATION

Pearson Edexcel - Thursday 7 June 2018 - Paper 2 (Calculator) Higher Tier
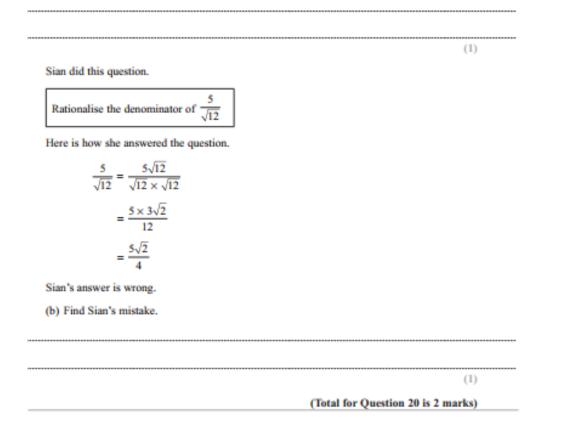
1.

20 Martin did this question.

Rationalise the denominator of $\dfrac{14}{2 + \sqrt{3}}$

Here is how he answered the question.

$$\frac{14}{2 + \sqrt{3}} = \frac{14 \times (2 - \sqrt{3})}{(2 + \sqrt{3})(2 - \sqrt{3})}$$

$$= \frac{28 - 14\sqrt{3}}{4 + 2\sqrt{3} - 2\sqrt{3} + 3}$$

$$= \frac{28 - 14\sqrt{3}}{7}$$

$$= 4 - 2\sqrt{3}$$

Martin's answer is wrong.

(a) Find Martin's mistake.

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(1)

Sian did this question.

Rationalise the denominator of $\dfrac{5}{\sqrt{12}}$

Here is how she answered the question.

$$\frac{5}{\sqrt{12}} = \frac{5\sqrt{12}}{\sqrt{12} \times \sqrt{12}}$$

$$= \frac{5 \times 3\sqrt{2}}{12}$$

$$= \frac{5\sqrt{2}}{4}$$

Sian's answer is wrong.

(b) Find Sian's mistake.

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(1)

(Total for Question 20 is 2 marks)

Pearson Edexcel - Thursday 2 November 2017 - Paper 1 (Non-Calculator) Higher Tier

2.

21 Show that $\dfrac{6 - \sqrt{8}}{\sqrt{2} - 1}$ can be written in the form $a + b\sqrt{2}$ where a and b are integers.

(Total for Question 21 is 3 marks)

Pearson Edexcel - Specimen Papers Set 1 - Paper 1 (Non-Calculator) Higher Tier

3.

19 Simplify fully $\dfrac{(6 - \sqrt{5})(6 + \sqrt{5})}{\sqrt{31}}$

You must show your working.

(Total for Question 19 is 3 marks)

Pearson Edexcel - Wednesday 4 November 2015 - Paper 1 (Non-Calculator) Higher Tier

4.

18 Rationalise the denominator of $\dfrac{10}{\sqrt{5}}$

Give your answer in its simplest form.

(Total for Question 18 is 2 marks)

Pearson Edexcel - Monday 9 June 2014 - Paper 1 (Non-Calculator) Higher Tier

5.

25 (a) Rationalise the denominator of $\dfrac{12}{\sqrt{3}}$

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(2)

(b) Work out the value of $(\sqrt{2} + \sqrt{8})^2$

....

(2)

(Total for Question 25 is 4 marks)

Pearson Edexcel - Tuesday 6 November 2012 - Paper 1 (Non-Calculator) Higher Tier

6.

26 (a) Rationalise the denominator of $\dfrac{5}{\sqrt{2}}$

....

(2)

(b) Expand and simplify $(2 + \sqrt{3})^2 - (2 - \sqrt{3})^2$

....

(2)

(Total for Question 26 is 4 marks)

7.