Four Maths Questions at Different Levels – Question Set 2

Easy higher tier GCSE

$\sqrt{5}(\sqrt{8} + \sqrt{18})$ can be written in the form

$a\sqrt{10}$ where a is an integer.

Find the value of a.

Edexcel GCSE, June 2018, Paper 1

Harder higher tier GCSE

n is an integer such that $3n + 2 \leqslant 14$ and $\dfrac{6n}{n^2 + 5} > 1$

Find all the possible values of n.

Edexcel GCSE, June 2018, Paper 1

Something interesting

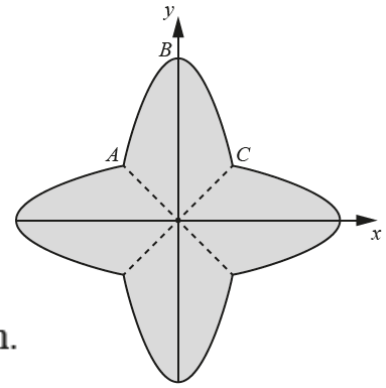
Evaluate the sum…

$$\frac{1}{\sqrt{1}+\sqrt{2}} + \frac{1}{\sqrt{2}+\sqrt{3}} + \cdots + \frac{1}{\sqrt{15}+\sqrt{16}}$$

Underground Maths 'Scary Sum'

A Level

The diagram shows a part ABC of the curve $y = 3 - 2x^2$, together with its reflections in the lines $y = x$, $y = -x$ and $y = 0$.



Find the area of the shaded region.

OCR Paper 2, June 2018

Answers at www.colmanweb/easter2020

Four Maths Questions at Different Levels – Answers Set 2

Easy higher tier GCSE

$\sqrt{5}(\sqrt{8} + \sqrt{18})$ can be written in the form

$a\sqrt{10}$ where a is an integer.

Find the value of a.

$$a = 5$$

Edexcel GCSE, June 2018, Paper 1

Harder higher tier GCSE

n is an integer such that $3n + 2 \leqslant 14$ and $\dfrac{6n}{n^2 + 5} > 1$

Find all the possible values of n.

$$n = 2, 3, 4$$

Edexcel GCSE, June 2018, Paper 1

Something interesting

Evaluate the sum…

$$\frac{1}{\sqrt{1}+\sqrt{2}} + \frac{1}{\sqrt{2}+\sqrt{3}} + \cdots + \frac{1}{\sqrt{15}+\sqrt{16}}$$

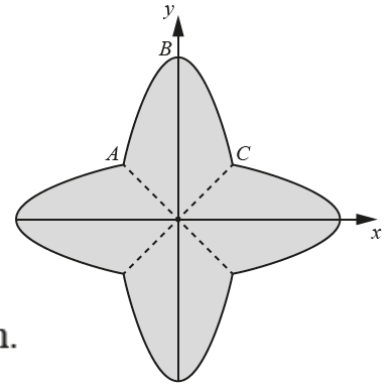
$$3$$

Underground Maths 'Scary Sum'

A Level

The diagram shows a part ABC of the curve $y = 3 - 2x^2$, together with its reflections in the lines $y = x$, $y = -x$ and $y = 0$.

$$\frac{44}{3}$$



Find the area of the shaded region.

OCR Paper 2, June 2018