

Further Maths Transition Work



Task 1: Read at least ONE book from the list on the back.

Write a one-paragraph review of the book and email to d.gustafson@saracenshigh.org

Task 2: Complete the questions below ensuring to show your work to be handed in at the start of September.

Email me I am always happy to answer your questions –my email is: d.gustafson@saracenshigh.org. Over the summer, feel free to ask about the resources above, studying at A level, or any interesting math problems! Good luck and enjoy doing interesting mathematics!

Tummy Ache

Timmy, Tammy and Tommy all set off separately to visit their doctor, leaving their homes at exactly the same time.

Timmy cycles the 8 km at an average speed of 20 km/hr. Tammy walks the 1.2 km at an average speed of 4 km/hr. Tommy drives the 16.5 km at an average speed of 45 km/hr. In what order do they arrive at the doctor's surgery?

<https://nrich.maths.org/2408/solution>

Crude Calculation

When Louise had her first car, 50 litres of petrol cost £40. When she filled up the other day, she noticed that 40 litres of petrol cost £50.

By what percentage has the cost of petrol increased over this time?

<https://nrich.maths.org/12536/solution>

The Power of x

Find the value of x, where

$$2^{x+1} - 2^{x-1} = 12$$

<https://nrich.maths.org/13228/solution>

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Diagonal Area

A square has area 72cm^2 . Find the length of its diagonal.

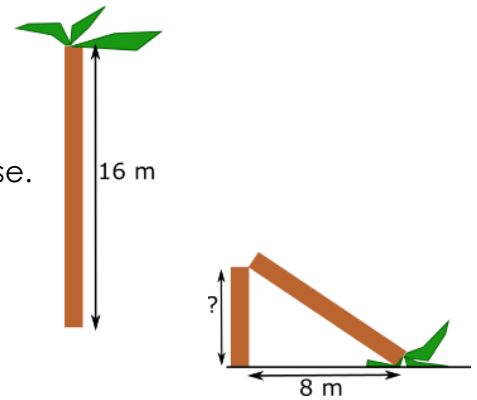
<https://nrich.maths.org/13224/solution>

Snapped Palm Tree

A palm tree that was 16 metres tall has snapped in a storm, so that the top of the palm tree has landed 8 metres from the base.

What is the height of the piece of the trunk that is still standing (vertically)?

<https://nrich.maths.org/12784/solution>



Turnips

Baldrick can afford to buy either 6 parsnips and 7 turnips, or 8 parsnips and 4 turnips.

Both options leave him with no change.

If he only bought turnips, how many could he afford?

<https://nrich.maths.org/2051/solution>

Acceptance Rate

The mean number of students accepted by a school in the four years 2007 to 2010 was 325.

The mean number of students accepted by the school in the five years 2007 to 2011 was 4% higher. How many students did this school accept in 2011?

<https://nrich.maths.org/12588/solution>

Odd Dice

Three fair, six-sided dice are numbered as follows:

A: 1, 1, 1, 2, 2, 2

B: 3, 3, 4, 4, 5, 5

C: 6, 7, 7, 8, 8, 8

The three dice are rolled once. What is the probability that the sum obtained is an odd number?

<https://nrich.maths.org/13666/solution>

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One or Both

A maths exam contained only two questions. Every pupil correctly answered at least one of the questions.

Question one was correctly answered by 70% of the pupils. Question two was correctly answered by 60% of them.

Nine pupils correctly answered both questions.

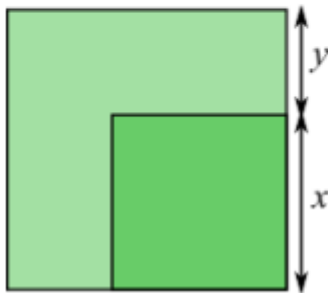
How many pupils took the exam?

<https://nrich.maths.org/794/solution>

A Third of the Area

In this diagram, the area of the small square is $\frac{1}{3}$ of the area of the large square.

Find $\frac{x}{y}$.



<https://nrich.maths.org/13546/solution>