MathsJam Shout

May 2024
Chalkdust issue 19 special

Discuss

Is QED or □ the best way to end a proof?
Find out what two Chalkdust editors thought on page 43 of issue 19.

Do you think the twin prime conjecture is true or false?
Find out what a medical doctor who we asked thinks on page 56 of issue 19.

What is the best norm?
Find out our top ten on page 72 of issue 19.

Game Is it in Chalkdust?

Think of a mathematical idea, concept or recreational maths topic. Check the website at **chalkdustmagazine.com** (search on Google for "site:https://chalkdustmagazine.com" followed by your search term) to see if someone's written about it for Chalkdust before.

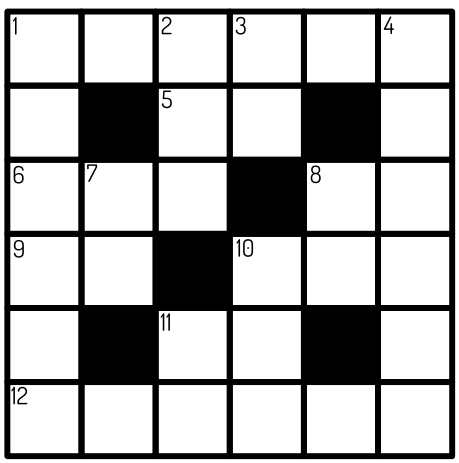
If you can't find it on there, why not write an article for Chalkdust? Discuss in your group:
- How would you structure an article about it?
- What's the hook, and the punchline?
- What would you include in the article, and what would you leave out?

If you get excited, you could even start drafting the article together.

Send your finished articles to contact@chalkdustmagazine.com

Find more content from Chalkdust Magazine, or order some copies to read at your MathsJam, by visiting **chalkdustmagazine.com**.

Puzzle Mini Crossnumber by Humbug



Solvers may wish to use the a calculator to (for example) obtain a list of multiples of 56113, but no programming should be necessary to solve the puzzle. As usual, no entries begin with 0.

This mini crossnumber was written by Humbug who writes the infamous Chalkdust crossnumber which you can find on pages 64–65 of issue 19.

Across

1	100% of 1D.	(6)
5	100% of 8A.	(2)
6	100% of 6A.	(3)
8	100% of 5A.	(2)
9	40% of 6A.	(2)
10	200% of 11D.	(3)
11	100% of 11A.	(2)
12	100% of 4D.	(6)

Down

1	561130% of 10D.	(6)
2	200% of 3D.	(3)
3	50% of 2D.	(2)
4	60% of 1D.	(6)
7	100% of 7D.	(2)
8	50% of 7D.	(2)
10	100% of 10D.	(3)
11	100% of 11A.	(2)

MathsJam Shout is a monthly sheet of ideas for activities to do at a MathsJam night. It's created using suggestions from a different MathsJam each month, and if you'd like to submit suggestions for a month in the future, email **katie@mathsjam.com** for details.

MathsJam is a monthly opportunity for like-minded self-confessed maths enthusiasts to get together in a pub and share stuff they like. Puzzles, games, problems, or just anything they think is cool or interesting. Monthly MathsJam nights happen in over 70 locations around the world, on the second-to-last Tuesday of each month. To find your nearest MathsJam, visit the website at **www.mathsjam.com**.

Recreational Mathematics

1. There is a unique real number x that can be expressed in the following form:

$$x = 1 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{1}{1+\ldots}}},$$

where the dots "..." mean "and so on, forever." What is this number x?

2. Take a strip of paper and fold it in half several times as described.

Imagine taking the ends in your hands and placing the right hand end on top of the left. Now press the strip flat so that it is folded in half and has a crease. Repeat the whole operation on the new strip. . . .

After folding the strip in half a number of times, the strip should be unfolded by exactly undoing the folding process (this is important to note, because different unfolding methods can result in different sequences of creases).

(a) Afrer 1 fold, the paper will have 1 crease. After 2 folds, the paper will have 3 creases. How many creases will there be after n folds?

(b) Unfold it and observe that some of the creases are IN and some are OUT. For example, three folds produce the sequence

in in out in in out out

What sequence would arise from 10 folds (if that many were possible)?