

GEOMETRIC DEATHS

For use in Werewolf/Blood on the Clocktower type games

VC DIMENSION

There's a hand over there, and a chunk of a head;
The pieces of one of our friends.
All over this field – look how far they were spread!
What a terrible way to end.

They were frozen first, then hit with a blow
But temperature wouldn't have mattered.
The VC dimension of ____ is low
And that's why they ended up shattered.

MAX CUT MIN FLOW

A jugular wound causes all sorts of spray;
An incredibly messy incision.
For a tidier scene, one needs to fillet
The victim with expert precision.

Our demon must be an excellent study –
Someone who's quite “in the know.”
For ____ lies in ribbons, but is not all that bloody
An example of max cut, min flow.

FRECHÉT DISTANCE (CO-WRITTEN WITH THIJS BEURSKENS)

The air was thick with gloomy fog
And the moon was losing its strength
An unlucky soul was walking their dog
On a leash with a minimum length.

But the dog was possessed by a magic so black –
All kindness was gone from its face
With anti-monotone rage, the dog walked back
And sent ____ tumbling into free space.

PARABOLIC LIFT

Look up to the sky, there's something grotesque
Not a cloud, not a bat, not a bird
The shape's getting clearer; it's human-esque
Some figure unnaturally curved.

Their atoms were mapped into "R to the 4"
And their bones became all stretched and shifted
What was once a person's a person no more;
It's ____, parabolically lifted.

MINIMUM BOUNDING SPHERE

To be buried alive is never great,
But there's actually something far worse.
An unlucky villager met this fate –
Screaming was heard from the hearse.

In a coffin, at least, you could somewhat repose
And the small bit of space helps with fear.
But unlucky ____ is optimally enclosed
In a minimum bounding sphere.

FOUR COLORING THEOREM (he/him pronouns)

Why does his face look increasingly blue?
But his toes are all black and rotting?
His skin is splotched with a bright red hue
Interspersed with a green sort of spotting.

Neighboring regions are not the same tone
So it's clear what ailment afflicts him
How sad that ____ will soon die alone –
Another four-coloring victim.

ART GALLERY PROBLEM

A demon will hunt 'till its victim is dead.
But this victim was desperate to hide.
They gratefully reached a polygonal shed
And they entered to shelter inside.

The demon soon followed – alas! alack!
This shed was a star-shaped domain
So one demon alone could still guard the shack,
And find ____, who then died in great pain.

TUKEY MEDIAN

If a swarm of bees starts to come near
It's best to move far far away.
As the buzzing gets stronger, so does your fear
“*Just please let them leave,*” you might pray.

For one of our friends, there were no winning tactics
Each halfspace they turned to had bees again
____ soon perished from anaphylaxis,
For they were the swarm's Tukey median.

HELLY'S THEOREM

There are n body parts, in “ $R-d$ -minus-one”
Let's understand the scene...
No visible weapon, no rope and no gun,
Still, this death was an unnatural thing

Each chunk is convex, and in groups of size d ,
Collectively, none are disjoint
So by Helly's theorem, we can clearly see
That all of the chunks share a point.

Oh, the humanity! This dense fleshy ball –
Who suffered this awful dissection?
Alas, it was ____ whose pieces now all
Have a nonempty intersection.

ZEROTH HOMOLOGY

Attention good people, please come to the square
There's a sight that we cannot ignore
A tall shiny guillotine has been placed there
We wonder, just who is it for?

A figure approaches, their head in a sack
Being led to their death like some beast
Soon after they kneel, there's a swish and a thwack.
Poor ____'s Betti zero increased.

FIRST HOMOLOGY

Assassins prefer to kill from afar
It's harder to trace them that way
So choosing a weapon with range is on par
For a killer to use on their prey.

Last night such a killer engaged in this sport
And silently pulled out a gun.
The coroner soon will have to report
An increase to ____'s Betti one.

SECOND HOMOLOGY

The human body is generally packed
Quite tightly with organs and bones.
So an internal parasite that becomes trapped
Must eat out a space for its home.

One parasite burrowed under the skin
And inside its victim it grew
Poor ____ was the host. Devoured from within,
They died from excess Betti two

ITH HOMOLOGY

Some types of horrors are hard to explain
No description can quite be employed
But rather a feeling of wrongness and pain
An Orwellian glimpse at the Void.

This Void has dimension that we shall call “i”
There’s no stopping it, no one’s a hero.
For now ____ has perished. “WHY?” we scream, “WHY?!”
Their ith homology was somehow nonzero.