Weekly Challenge

Solve the challenge, share your solution and summit the ranks of our Community!

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IDEAS WANTED

We're actively looking for ideas on how to improve Weekly Challenges and would love to hear what you think!

SUBMIT FEEDBACK

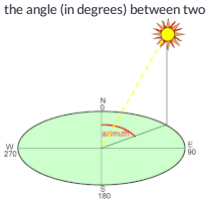
Weekly Challenge

Challenge #67: Calculate Spatial Angles

JoeM
Alteryx Alumni (Retired)

The solution to last week's challenge can be found HERE.

This week, we get back to spatial! A wireless carrier wants to geolocate or triangulate the location of a device/user based on the location of nearby cell towers and the device/user by determining the azimuth. As a result, they would like to calculate the angle (in degrees) between two points where a line is drawn from the lower point directly horizontally towards the other point.



Bonus: Try solving one way with the spatial tools, and another using no spatial tools!

challenge_67_start_file.yxmd

challenge_67_solution.yxmd

Intermediate | Preparation | Spatial | Spatial Analysis | Transform

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NicoleJohnson
15 - Aurora

My solution, two ways - one with spatial tools, one without! :)

PS. Holy trigonometry, I had to dig deep for that one. My high school self is very disappointed with me right now for apparently forgetting everything I once knew about calculating angles...

▷ Spoiler

challenge_67_NicoleJohnson.yxmd

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alex
11 - Bolide

I used a couple more tools than @NicoleJohnson to calculate all the distances and angles, but came away with the solution in both formats. Another Masonic image transposed onto the DC landscape :>

▷ Spoiler

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MarqueeCrew
19 - Altair

I got to the same answer as @NicoleJohnson, but stopped after getting the right result. I get no dessert.

Cheers,
Mark

Alteryx ACE & Top Community Contributor

Chaos reigns within. Repent, reflect and restart. Order shall return.
Please Subscribe to my youTube channel.

challenge_67_MarqueeCrew.yxmd

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MinaGO
7 - Meteor

Oh gosh my way is super hackish and I didnt know how to do the bonus. I've had a look and there are definitely a lot of spatial features I am not familiar with, especially the functions, nice to learn from other's answers.

▷ Spoiler

challenge_67_start_file.yxmd

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SeanAdams
17 - Castor

So - full credit goes to this site which explained the full math of the great circle distance; provided pseudo code in Java / excel formulas; etc. http://www.movable-type.co.uk/scripts/latlong.html
I fully admit I don't understand the derivation of these formulae, but at least a little smarter now on how to use some of the trig & distance functions in Alteryx

This solution contains both spatial & basic trig version, and the non-spatial calculates both distance and angle fully using trig.

To @NicoleJohnson 's point - who would have ever thought that a subject like "Math" would come in useful one day...
Possibly one-day, I may find a good use for some of the other subjects we did in school like accounting; computer science; Inglish Wrting; etc. :-)

▷ Spoiler

challenge_67_SeanSolution.yxmd

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Natasha
9 - Comet

Hopefully, my spatial solution will count as spatial since I used only one spatial tool.

I also have to admit a trigonometry defeat as I am sure 16 formulas were unnecessary and the answer I got was anyway smaller by ~1,5 degrees. That being sad, my spacial answer is also a bit off but I guess it can be a rounding error.

▷ Spoiler

challenge_67_NK_1.yxmd

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JoeM
Alteryx Alumni (Retired)

The solution for Challenge #67 is posted! I'm sorry if is exacerbated any negative feelings around having to recall some highschool trig for that bonus. :)

Share 0 LIKES Reply

Natasha
9 - Comet

Thanks, JoeM

I see many people use Spatial info before cross tab and distance calculation. Is there any reason for that, as I had the same results without this step?

Share 0 LIKES Reply

estherb47
15 - Aurora

Haven't solved it without the spatial tools yet. Here's my solution with the spatial tools. Nothing very creative.

challenge_67_EHB_solution.yxmd

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