

**Math 280: Graph Theory**  
**Instructor: David Zureick-Brown (“DZB”)**  
**GODY’s! (Graph Of The Day)**

Last updated: November 18, 2024

Part 1 of the GODY’s is here: <https://dmzb.github.io/teaching/2024Fall280/gody-F24-280.pdf>

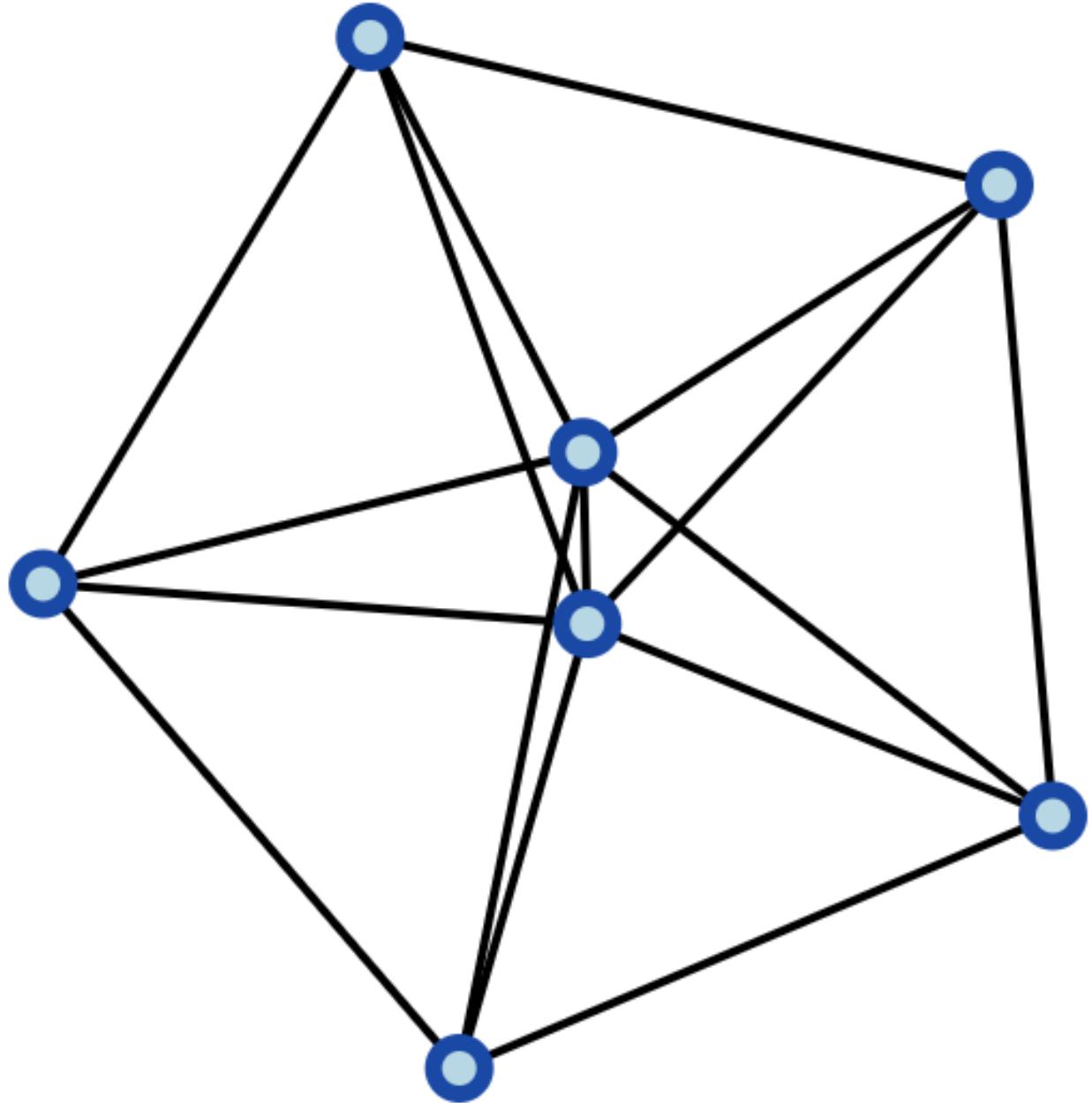
Part 2 of the GODY’s is here: <https://dmzb.github.io/teaching/2024Fall280/gody-F24-280-1.pdf>

## Contents

<b>17 House of Graphs</b>	<b>2</b>
<b>18 The Chromatic number of the plane</b>	<b>5</b>
<b>19 Random Graphs</b>	<b>9</b>
<b>20 Interesting graphs from Ramsey Theory</b>	<b>17</b>
<b>21 graph of all graphs</b>	<b>23</b>

## 17 House of Graphs

<https://houseofgraphs.org/graphs/26>

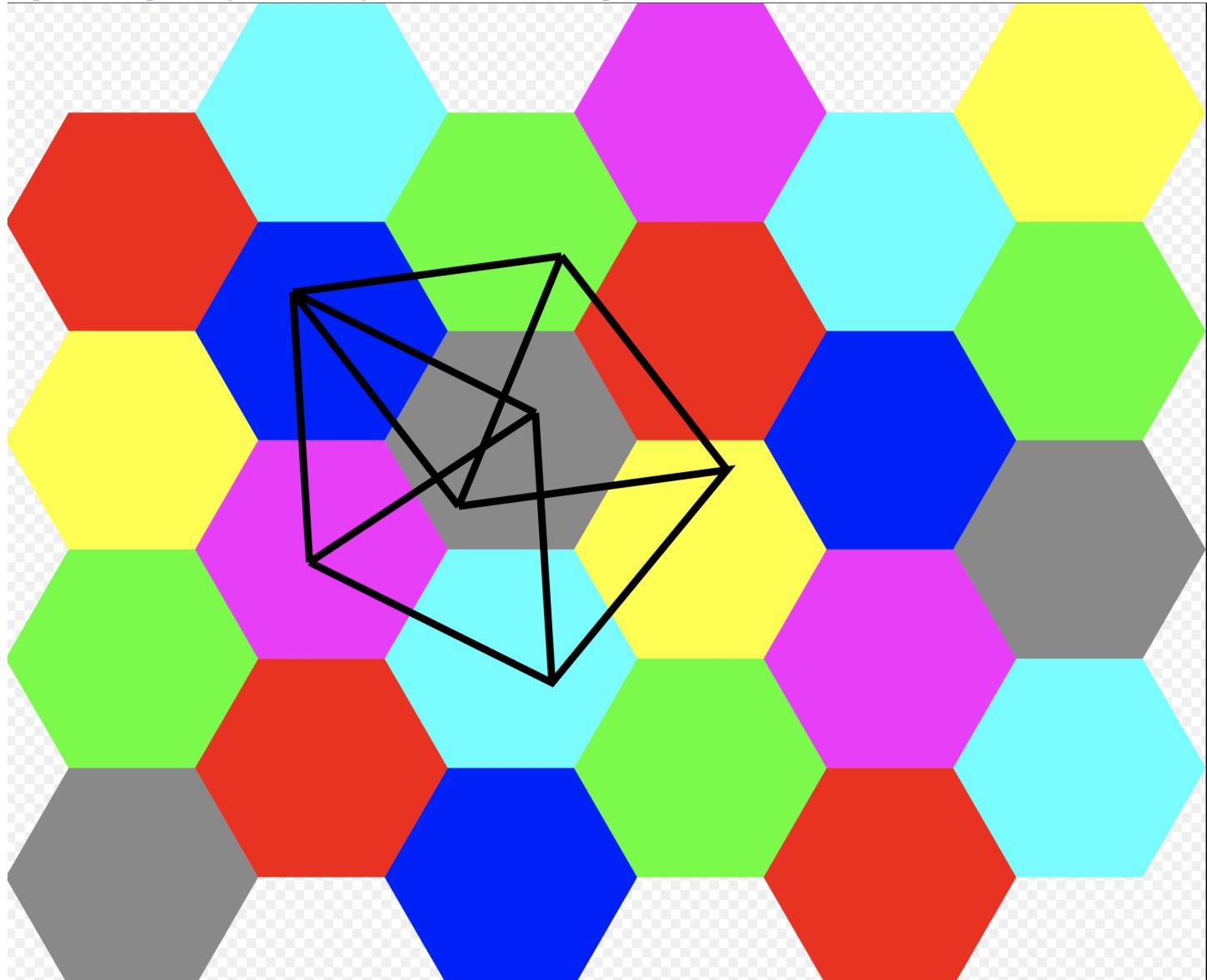




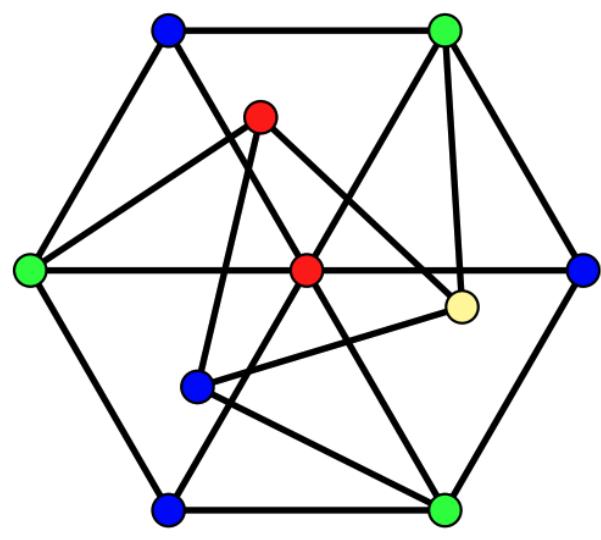
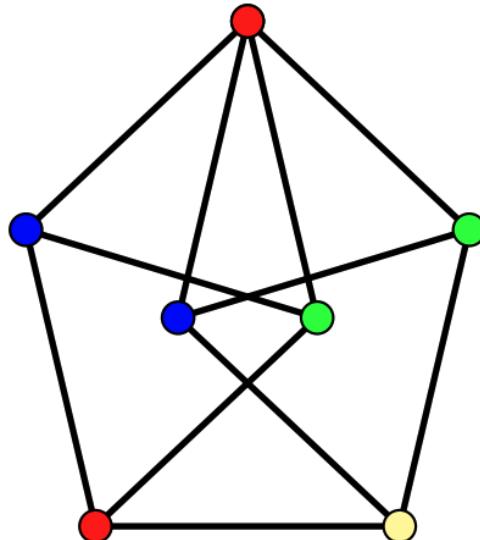


## 18 The Chromatic number of the plane

[https://en.wikipedia.org/wiki/Hadwiger%20Nelson\\_problem](https://en.wikipedia.org/wiki/Hadwiger%20Nelson_problem)



<https://arxiv.org/pdf/1805.00157>



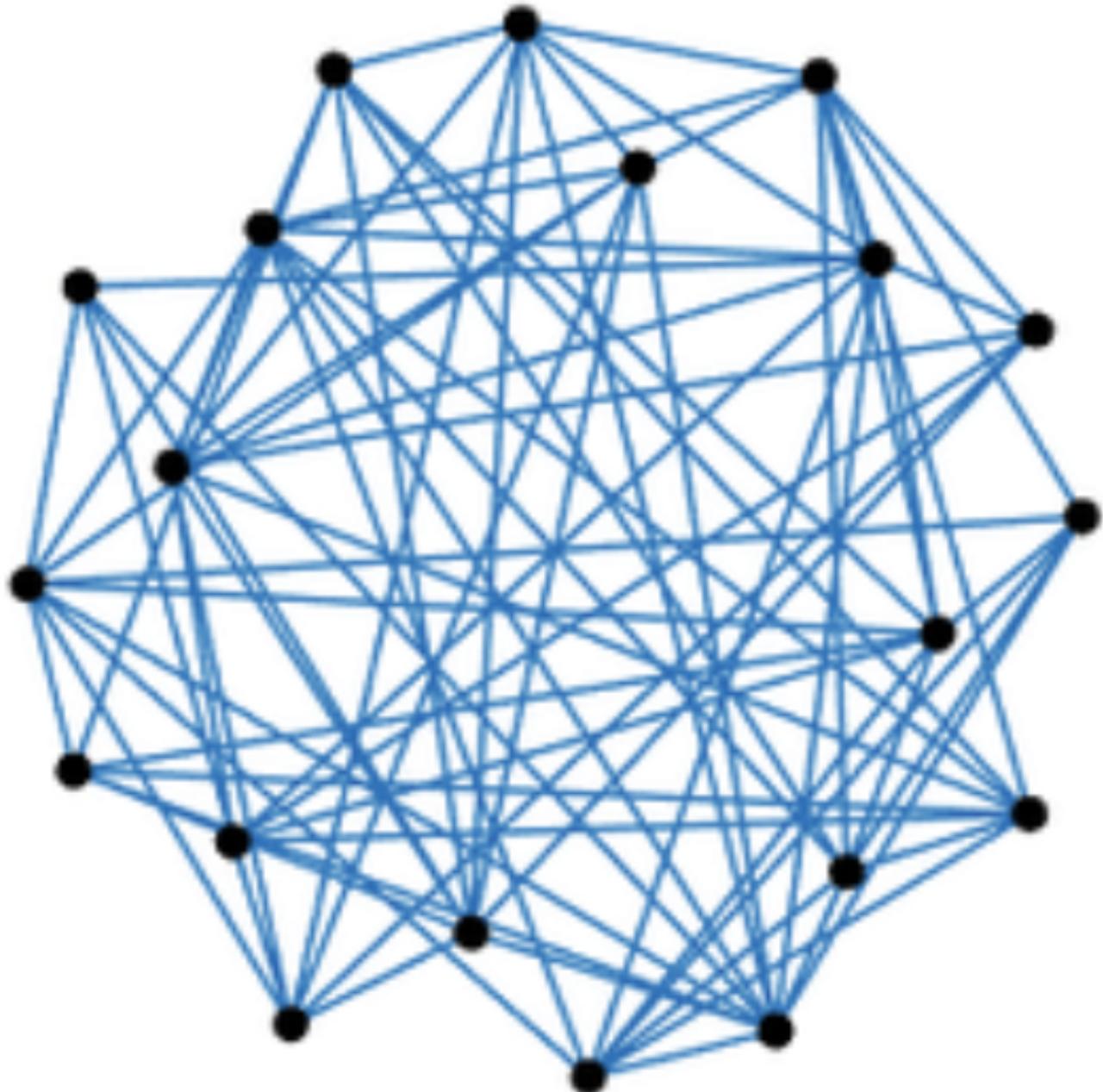


Alexander Prize

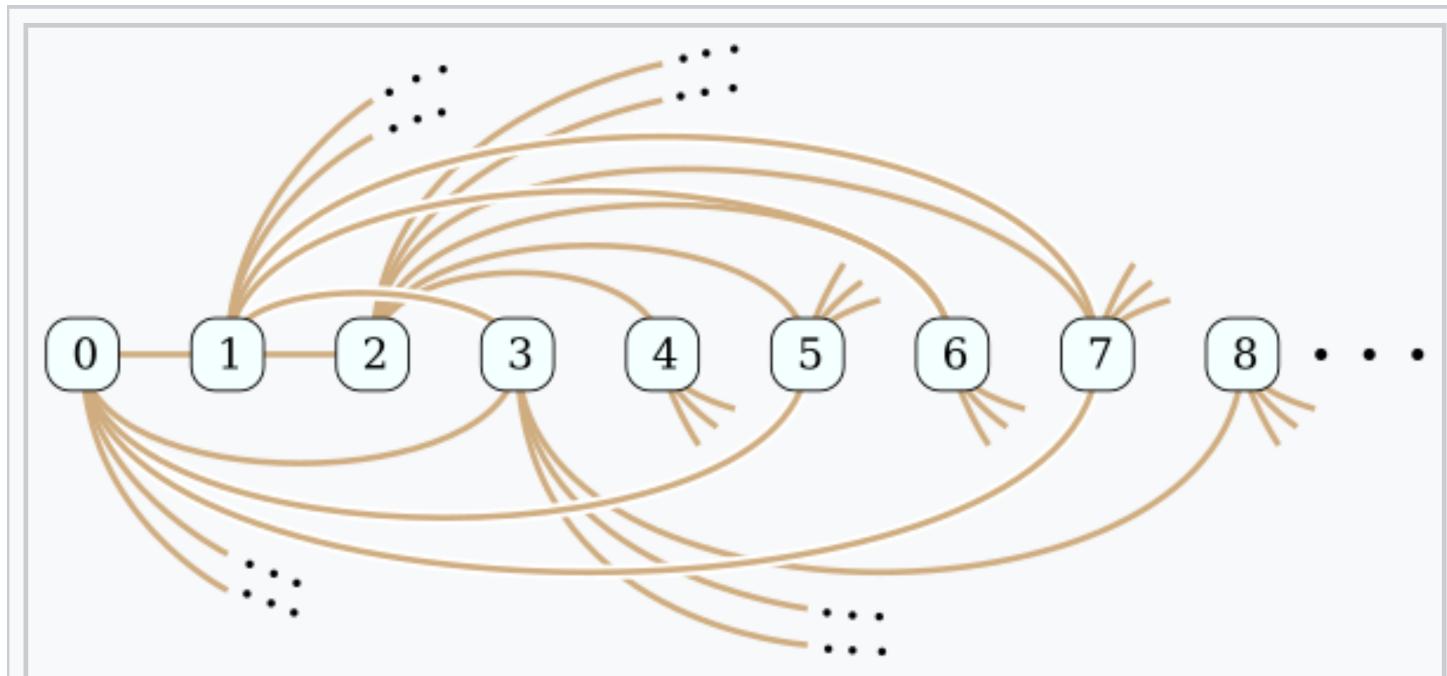


## 19 Random Graphs

[https://dshizuka.github.io/networkanalysis/09\\_randomnets.html](https://dshizuka.github.io/networkanalysis/09_randomnets.html)



[https://en.wikipedia.org/wiki/Rado\\_graph](https://en.wikipedia.org/wiki/Rado_graph)







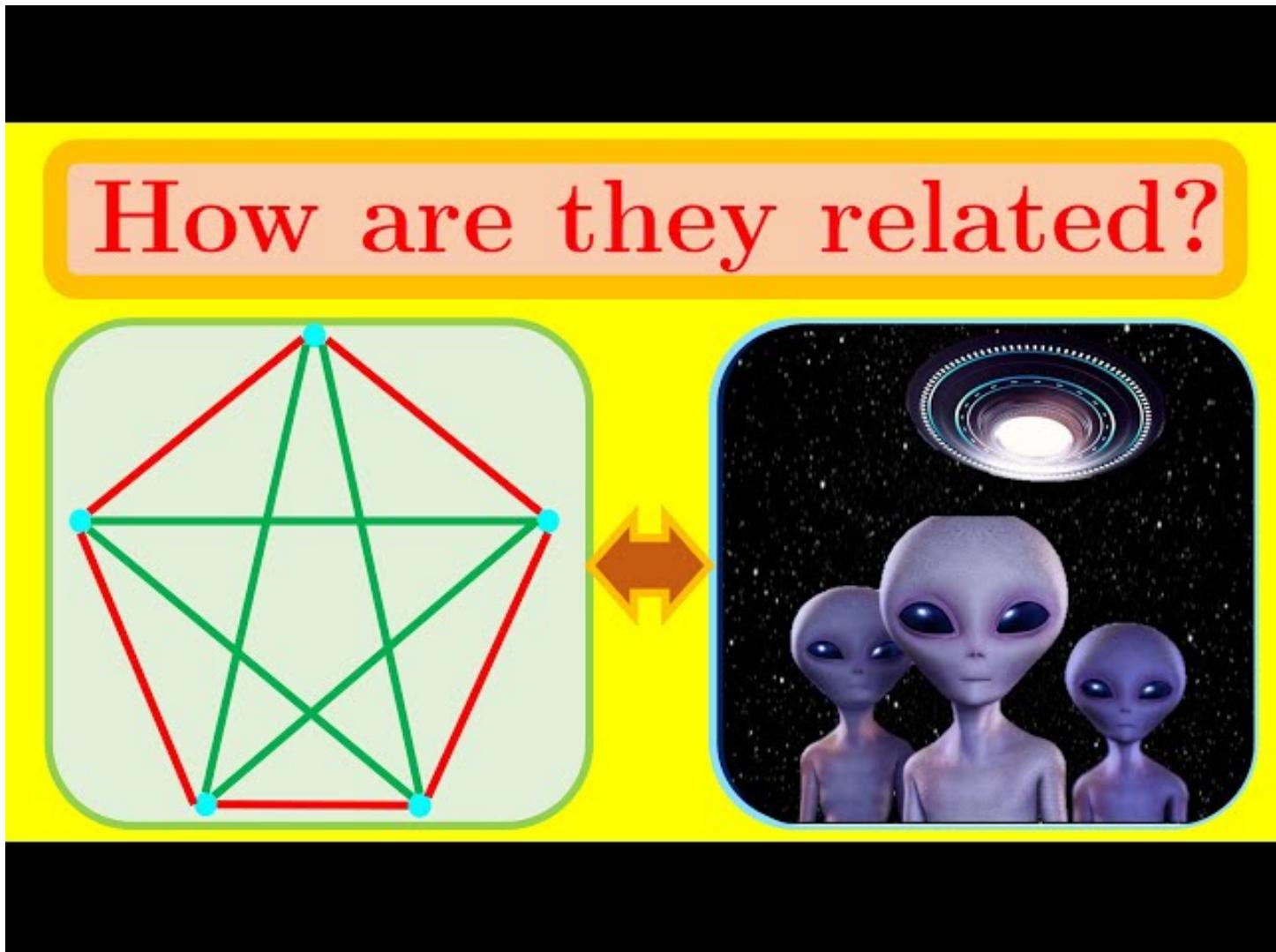


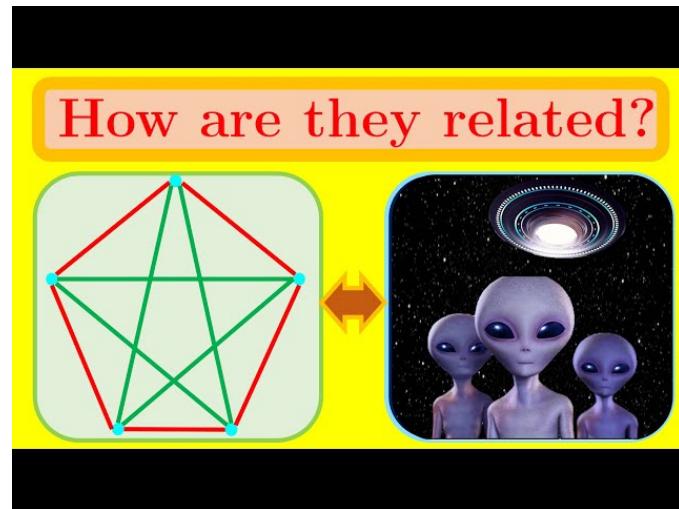






## 20 Interesting graphs from Ramsey Theory



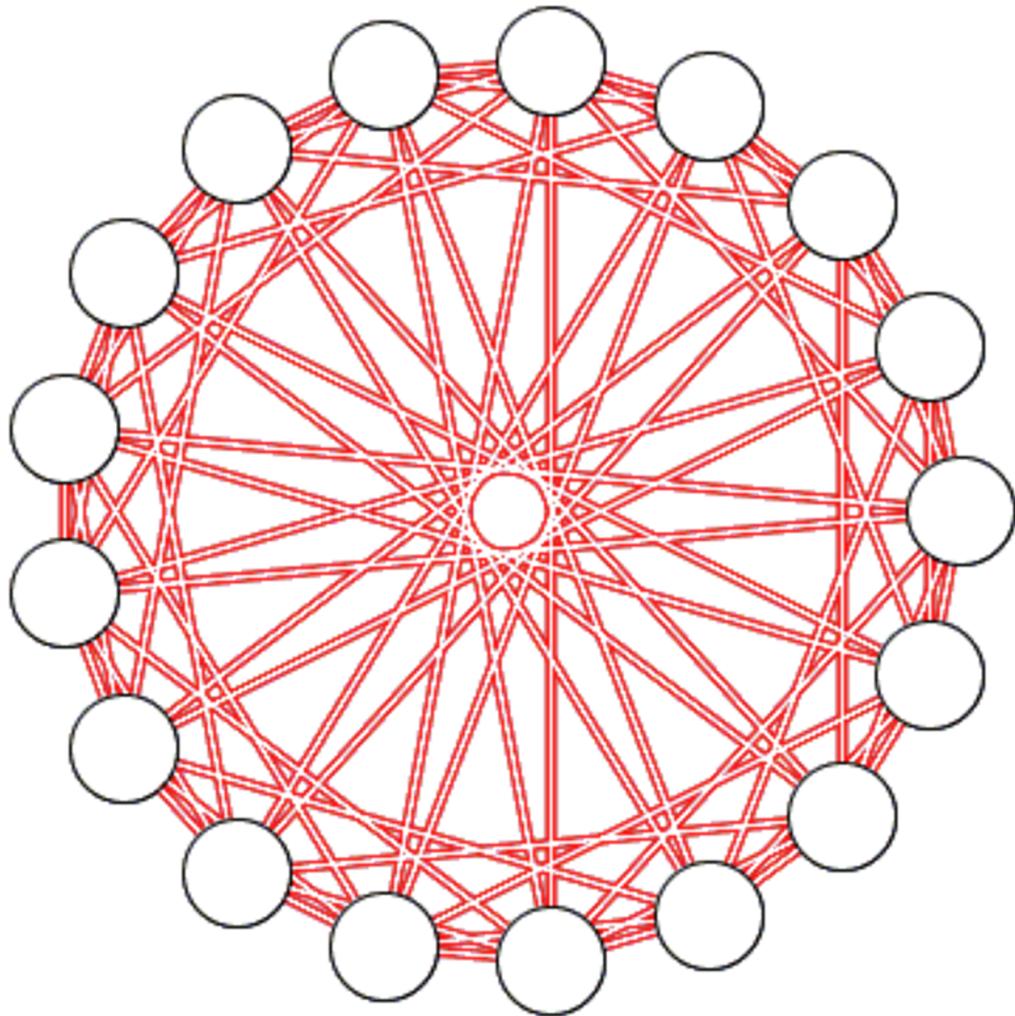


SUPPOSE ALIENS INVADE THE EARTH AND THREATEN TO OBLITERATE IT IN A YEAR'S TIME UNLESS HUMAN BEINGS CAN FIND THE RAMSEY NUMBER FOR RED FIVE AND BLUE FIVE. WE COULD MARSHAL THE WORLD'S BEST MINDS AND FASTEST COMPUTERS, AND WITHIN A YEAR WE COULD PROBABLY CALCULATE THE VALUE. IF THE ALIENS DEMANDED THE RAMSEY NUMBER FOR RED SIX AND BLUE SIX, HOWEVER, WE WOULD HAVE NO CHOICE BUT TO LAUNCH A PREEMPTIVE ATTACK.

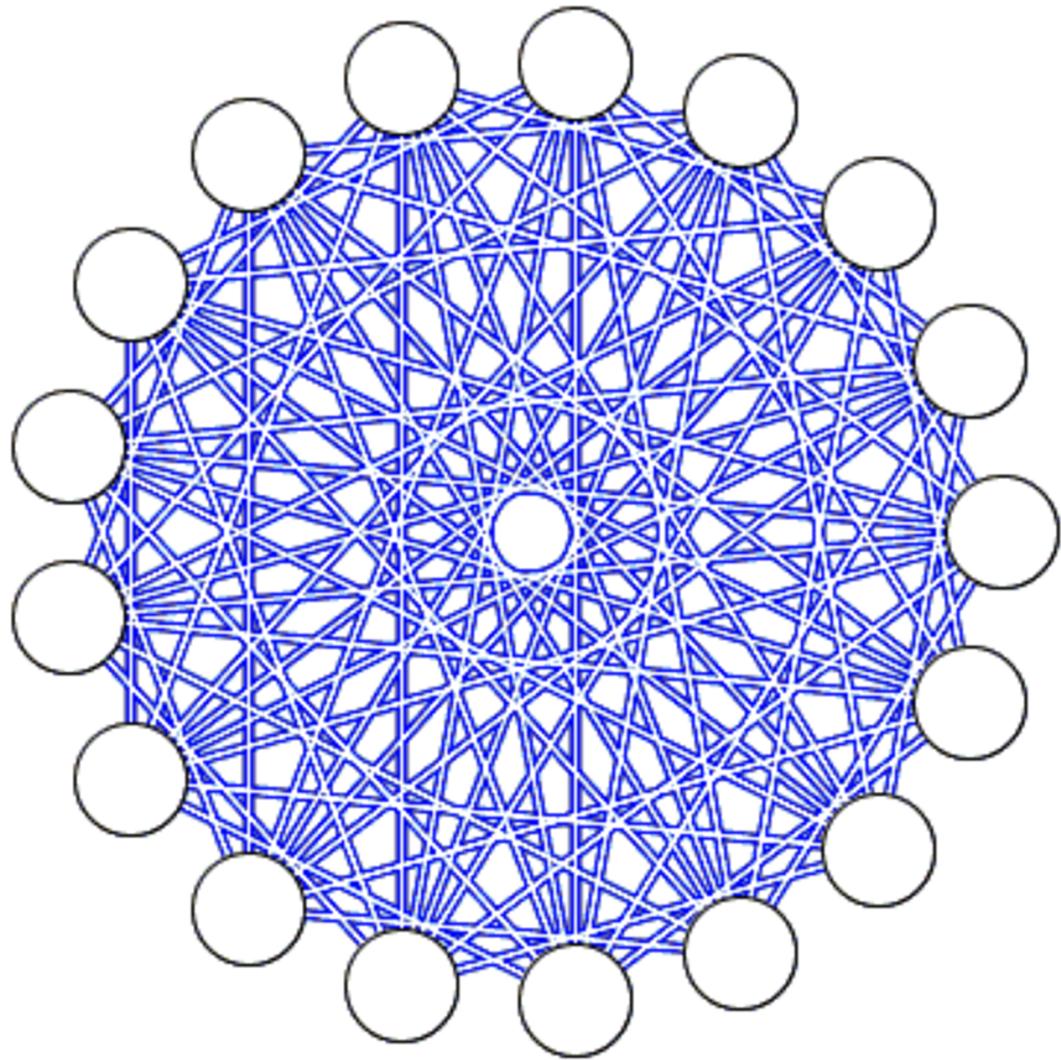
- PAUL ERDŐS -

LIBQUOTES.COM

<https://www.cut-the-knot.org/arithmetic/combinatorics/Ramsey44.shtml>

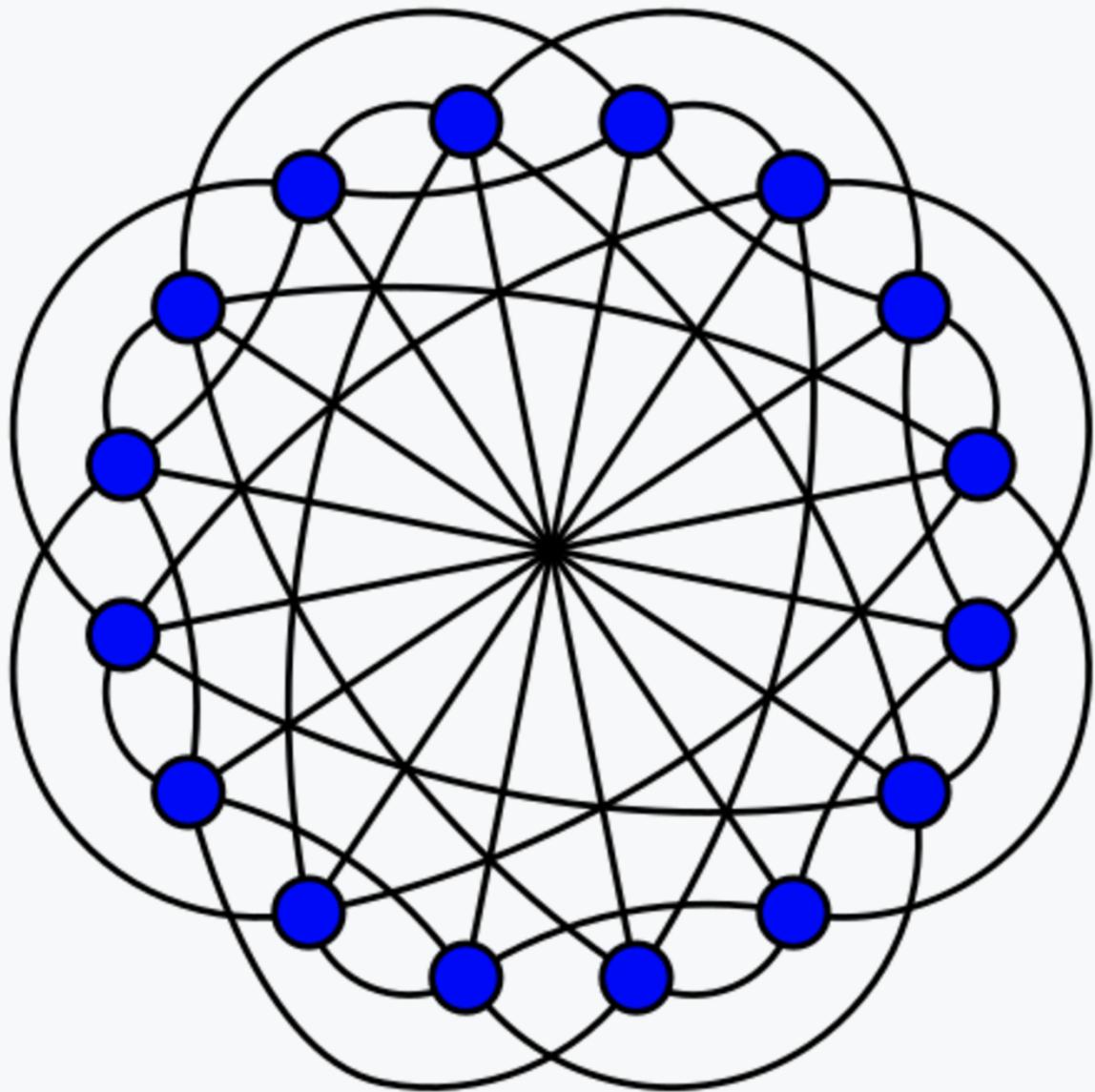


Place 17 nodes on a circle and join all the chords of lengths 1, 2, 4, and 8.



The complementary graph consists of chords of lengths 3, 5, 7, and 11.

[https://en.wikipedia.org/wiki/Clebsch\\_graph](https://en.wikipedia.org/wiki/Clebsch_graph)





## 21 graph of all graphs

TODO

