



Math and CS lead to
GREAT CAREERS!

COMPUTING
- Computer Scientist
- Computer Graphics Animator
- Software Engineer

OPTIMIZATION
- Cryptographer
- Scheduling Specialist
- Corporate Strategist

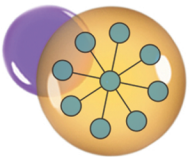
BUSINESS & FINANCE
- Actuary
- Financial Analyst
- Economist

MATHEMATICAL MODELLING
- Medical Researcher
- Physicist
- Meteorologist

STATISTICS
- Biostatistician
- Marketing Manager
- Data Analyst

MATHEMATICAL DISCOVERY
- Professor
- Researcher

Resources available at
cemc.uwaterloo.ca



POTW

Problem of the Week (POTW) is designed to provide an ongoing opportunity to solve mathematical problems. Each week, problems from various areas and levels of difficulty in mathematics are posted on our website and e-mailed to subscribers.



CS Circles

Computer Science (CS) Circles is a free resource that teaches the basics of Python programming in a semi-interactive fashion. CS Circles contains guided examples and instructions, along with exercises, to help students track their progress.



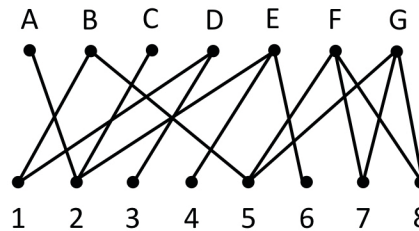
Contests

The Centre for Education in Mathematics and Computing (CEMC) creates and administers many internationally recognized contests to help to inspire the next generation of students to develop an interest in and love for mathematics and computer science.

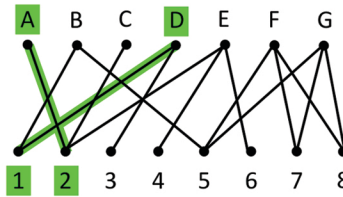


Problem 1

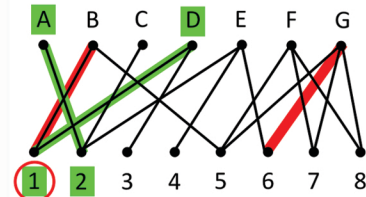
In the graph below, vertices A,B,C,D,E,F and G represent living kidney donors and vertices 1,2,3,4,5,6,7, and 8 represent patients in need of a kidney. The edges connecting pairs of vertices represent the compatible matches between donors and patients. What is the maximum number of patients that can be matched with a compatible donor?



Note: A patient can only receive one kidney and a live donor only has one kidney to donate.



Allowed



Not Allowed

Problem 2

Bob tries to pass a note to Alice during class. A teacher intercepts the note as it was being passed across the room. Luckily, Bob had encrypted his message using a Caesar cipher. The encrypted message is shown below. Can you decipher it?

Hint: The answer from Problem 1 above might help!

SGZNOYGCKYUSK

Solutions: cemc.uwaterloo.ca/resources/real-world.html

