Chapter 2 checkpoint!

Scorecard!

Learning target:	P1	P2	L1	L2	L3	L4
Your confidence level before starting (0-5):						
Your confidence level after the quiz (0-5):						
The mark you earned on this attempt:	Success! Revise! Try again!	Success! Revise! Try again!	Success! Revise! Try again!	Success! Revise! Try again!	Success! Revise! Try again!	Success! Revise! Try again!
Learning target:	G1	G2	G3	G4		
Your confidence level before starting (0-5):						
Your confidence level after the quiz (0-5):						
The mark you earned on this attempt:	Success! Revise! Try again!	Success! Revise! Try again!	Success! Revise! Try again!	Success! Revise! Try again!		

Before anything else, please do the following:

- Rank your confidence from 0-5 on each of the learning targets. 5 means "I could teach a whole class about this;" 0 means "I am genuinely not sure I have heard these words before."

- Rip all the pages apart.

- Write your name on this page and on each of the other pages of the quiz.

Then do the quiz! Some reminders:

- Open notes, closed computer.

- If you need more room to write, use the back of the same learning target page, or ask me for some scratch paper.

- Read the questions carefully and make sure you're answering each part.

- Show all your work and explain all your thinking!

When you are done:

- Rank your confidence from 0-5 on each of the learning targets. 5 means "I absolutely nailed that question for sure;" 0 means "oof, I definitely didn't get that one."

- Make double sure your name is on every page, including any scratch paper.

- Hand in your work, separated by learning target.
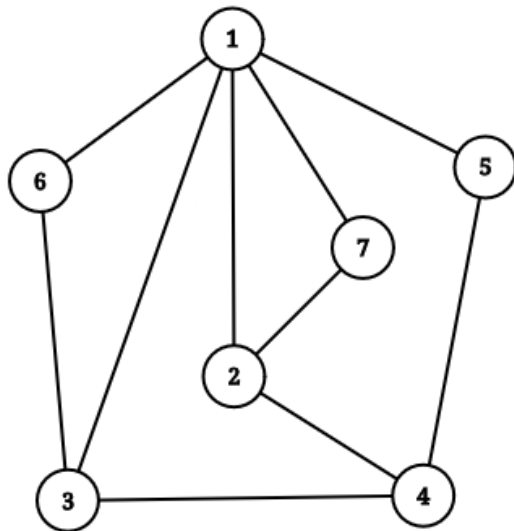
Have fun and do your best! I believe in u ♡

Learning target G1, version 1

1. Use the vertex set V and edge set E below to draw a picture of the graph $G = (V,E)$.

$$V = \{a,b,c,d,e,f,g\}$$
$$E = \{\{a,b\},\{a,d\},$$
$$\{b,c\},\{b,d\},\{b,e\},\{b,f\},$$
$$\{c,g\},\{d,e\},\{e,f\},\{f,g\}\}$$

2. Write down the edge set and vertex set of the graph H drawn below:

Learning target G2, version 1

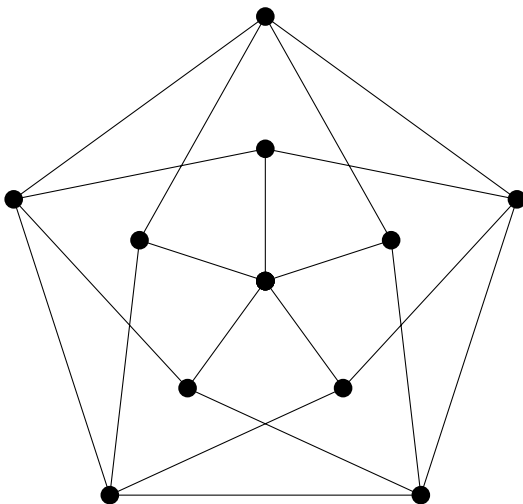Are the graphs *G* and *H* on the previous page isomorphic?

- If so, give a relabeling, and convince me that it respects the edges.

- If not, carefully explain how you know for sure.

Learning target G3, version 1

1. Draw a tree in which the highest degree is 4.
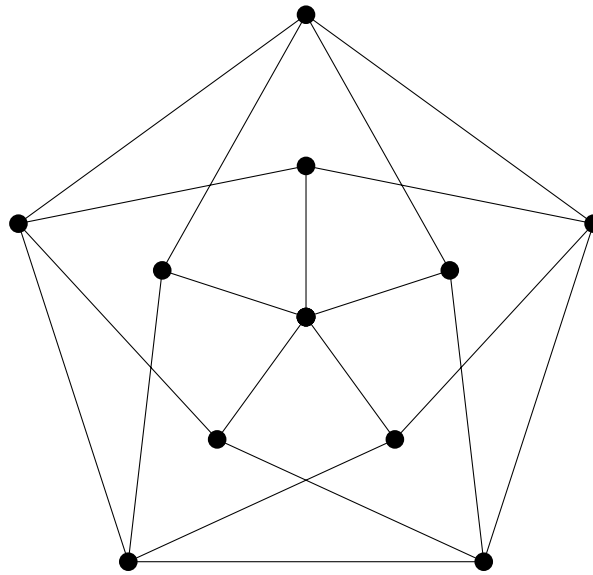
2. Draw a subgraph of $K_{3,3}$.

3. Does the graph G below have an Euler trail? If so, draw it; if not, explain how you know.

4. Based on the drawing of the graph G above, can you conclude whether or not G is planar? Why or why not?

MATH 210   Your name: ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

Learning target G3, version 1

1. Find the chromatic number of the graph below, and show me a proper coloring.

2. Prove that you're right. (That is, give a convincing reason why the chromatic number isn't *less* than the number of colors you used.)

Learning target P2, version 2

This is true: If G' is a subgraph of a bipartite graph G, then G' is bipartite.

1. Write a framework for a direct proof.

2. Write a framework for a proof by contrapositive.

3. Write a framework for a proof by contradiction.

Learning target P1, version 2

Prove that if G' is a subgraph of a bipartite graph G, then G' is bipartite.

Use one of your frameworks from the P2 problem.

Learning target L1 / L2 / L3, version 2

Consider the following statement: Every tree is planar.

L1. Translate this into "if-then" form in human language:

and then translate your human "if-then" version into properly quantified symbols.

L2. Write the contrapositive, converse, and inverse of this statement in human words.

Contrapositive:

Inverse:

Converse:

L3. Write the negation of the original statement in symbols, and translate it into human words.

Bonus: Prove or disprove this statement. Use the back of this page.

Learning target L4, version 2

Are the two compound logical statements below logically equivalent or not? Include a truth table and a clear explanation.

$$(P \wedge Q) \to R \qquad \neg P \vee \neg Q \vee R$$