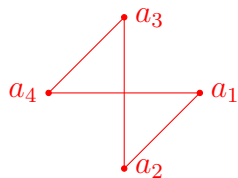
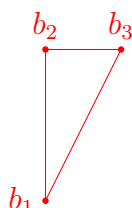


## Answer Key

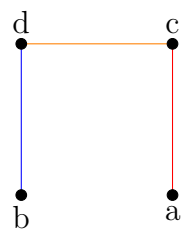
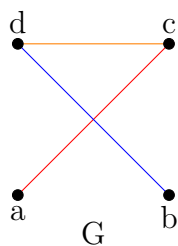
1. Multiple solutions, but here are some examples:



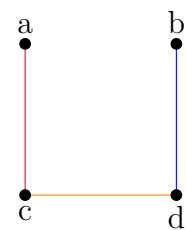
a. Example:



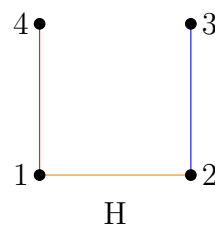
b. Example:



Transforming



Transforming



2.

a. Vertex Map: 

G	a	b	c	d
H	4	3	1	2

b. Edge Map: 

G	{a, c}	{c, d}	{d, b}
H	{4,1}	{1,2}	{2,3}

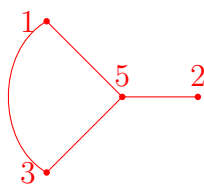
3. a. Write out all edges for both graphs.

$G$ : {2, 5} {2, 3} {3, 4} {4, 5} {2, 5} {5, 6}

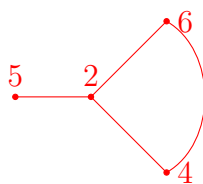
$H$ : {d, c} {y, x} {x, w} {w, v} {y, v} {v, u}

- b. For each edge from  $G$ , write out what edge in  $H$  corresponds to it.  
Example: {2,5}  $\rightarrow$  {d, c}

Let's split up  $G$  into two subgraphs to see it more clearly...



$\{1, 3\} \rightarrow \{b, a\}$   
 $\{2, 5\} \rightarrow \{d, c\}$   
 $\{4, 6\} \rightarrow \{e, f\}$



$\{1, 5\} \rightarrow \{b, c\}$   
 $\{2, 6\} \rightarrow \{d, f\}$   
 $\{3, 5\} \rightarrow \{a, c\}$

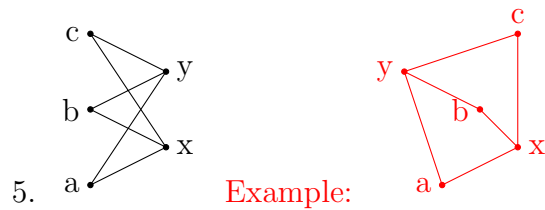
$\{2, 4\} \rightarrow \{d, e\}$   
 $\{3, 5\} \rightarrow \{a, c\}$

4. a. Finish the adjacency matrix:

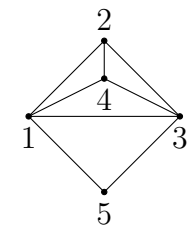
	a	b	c	d	e
a	0	1	0	0	1
b	1	0	1	0	0
c	0	1	0	1	1
d	0	0	1	0	1
e	1	0	1	1	0

- b. Fill out the degrees of each:

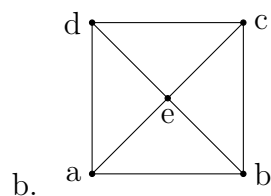
a	b	c	d	e
2	2	3	2	3



6. a.



1, 2, 4, 1      1, 3, 5, 1      2, 3, 4, 2  
 1, 3, 4, 1      1, 2, 3, 5, 1 (unbounded).



a, b, e, a      a, e, d, a      d, e, c, d      b, c, e, b  
 a, b, c, d, a (unbounded)