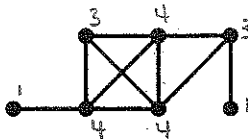


(1) Consider the graph.



(a) Find  $v$ ,  $e$ , and  $c$ .

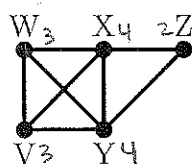
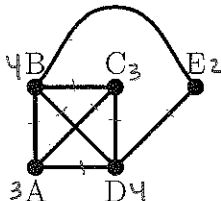
$v=7$   $e=10$   $c=1$

(b) Find the degree list for this graph.

$1, 1, 3, 3, 4, 4, 4$

(2) Are the two graphs below isomorphic? If so, describe a graph isomorphism.

$v=5$   
 $e=8$   
 $c=1$   
 $d=2, 3, 3, 4, 4$



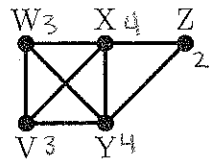
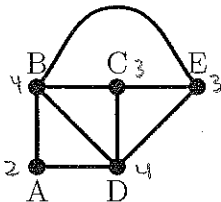
$v=5$   
 $e=8$   
 $c=1$   
 $d=2, 3, 3, 4, 4$

**Yes**

$A \leftrightarrow V$
$B \leftrightarrow X$
$C \leftrightarrow W$
$D \leftrightarrow Y$
$E \leftrightarrow Z$

(3) Are the two graphs below isomorphic? If so, describe a graph isomorphism.

$v=5$   
 $e=8$   
 $c=1$   
 $d=2, 3, 3, 4, 4$



$v=5$   
 $e=8$   
 $c=1$   
 $d=2, 3, 3, 4, 4$

**Yes**

$A \leftrightarrow Z$
$B \leftrightarrow X \text{ or } Y$
$C \leftrightarrow W \text{ or } V$
$D \leftrightarrow Y \text{ or } X$
$E \leftrightarrow V \text{ or } W$