Name_____

MTH 287 Graded HW #4

(due Monday July 25, 2016)

Show any work along with the answers on this paper.

1) Show that the cardinality of the negative even numbers is the same as all of the odd numbers.

Bonus A) How many functions are there of the form: $(x) = mx + b$, where m and b are real numbers? How do you know?

2) Given the Hasse diagram, for the Poset, find the following:

a) minimal elements

b) minimum elements

c) maximal elements

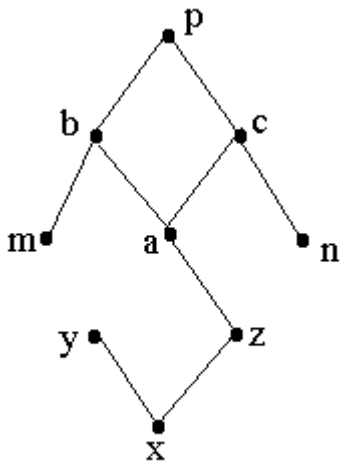
d) maximum elements

e) glb(y,b)

f) lub(z,c)

g) Does x relate to m?

h) Does z relate to b?



3) Given the Hasse diagram, for the Poset, find the following:

i) minimal elements

j) minimum elements

k) maximal elements

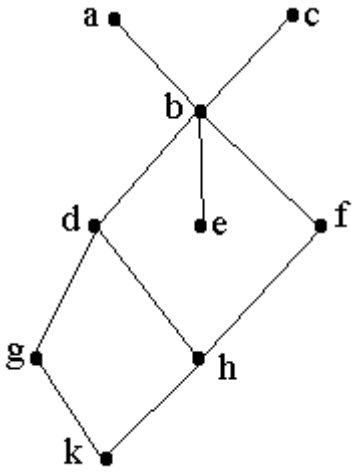
l) maximum elements

m) glb(a,f)

n) lub(g,f)

o) Does h relate to a?

p) Does g relate to e?



4) Given the Hasse diagram, for the Poset, find the following:

a) minimal elements

b) minimum elements

c) maximal elements

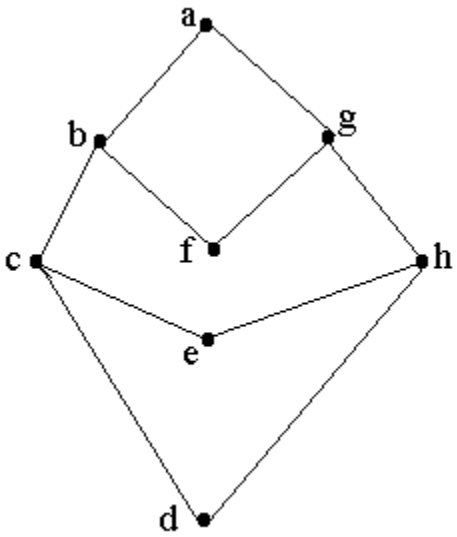
d) maximum elements

e) glb(c,g)

f) lub(e,b)

g) Does h relate to c?

h) Does d relate to a?



5) a) find ${}_6C_3$

b) find ${}_6P_3$

c) How many ways can 4 people be selected from a group of 10 people?

d) How many code words made of 3 letters then 3 numbers can be made?

6) a) Find the probability that the sum of two fair dice when rolled is > 8

b) Find the probability that exactly two marbles will be red when 2 are drawn from 3 red and 3 blue without replacement.

c) Find the probability that exactly two marbles will be red when 3 are drawn from 3 red and 3 blue with replacement.

Bonus B) Find the probability that one King and one Ace are drawn from a deck of cards when three cards are drawn without replacement.