Review of 3D Graphing Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I. On the 3D graph to the right:

A) Label the y and z axes as given

by the right hand rule.

B) Mark units on all three axes ranging

from -3 to 5. Space them as evenly as

you can.

C) Plot points A:(2, 3, 4) , B: (0, -2, -4)

And C: (-1, 4, -3).

D) What is the midpoint of AB? x axis

E) Name 3 noncollinear points on the plane y = 5.

F) What is true of any line parallel to the x axis?

G) What is true of any plane parallel to the xy plane?

H) What is true of any line perpendicular to the xz plane?

I) What is true of any plane perpendicular to the y axis?

J) Find the length of BC.

K) What are the intercepts of the plane 2x – 6y + 3z = 12 ?

L) The plane 4x – 7z = 3 is parallel to something. What is it?

M) Describe the location of the plane z = 3.

N) Write the equation of the plane through A, B, and C.

O) Write a plane parallel to x – 6y + 3z = 8 if the point (4, -2, 8) lies on it.

Classify these as “sometimes”, “always” or “never” true.

\_\_\_\_\_\_\_\_\_\_P) If 2 planes are perpendicular to a third plane, they are parallel to each other.

\_\_\_\_\_\_\_\_\_\_ Q) If If 2 lines are perpendicular to a third line, they are parallel to each other.

**Some Simple Extensions:**

II. On the 3D graph to the right:

A) Label the y and z axes as given

by the right hand rule.

B) Mark units on all three axes ranging

from -3 to 5. Space them as evenly as

you can.

C) Draw position vectors OP = <2, 4, -1>

and OQ = <-2, -4, 3>.

D) What would be the sum of OP + OQ?

E) Find |OP|.

F) Predict what you think OP **** OQ would be.

G) Write PQ.

H) Find | OQ | \_\_\_\_\_\_\_\_\_\_ and | PQ | = \_\_\_\_\_\_\_\_\_\_\_\_

I) Use this information to find m∠POQ.