

3D Coordinate Systems – Mixed Practice

Name: _____

Date: _____

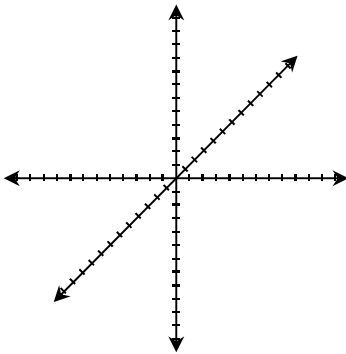
Period: _____

Read directions carefully.

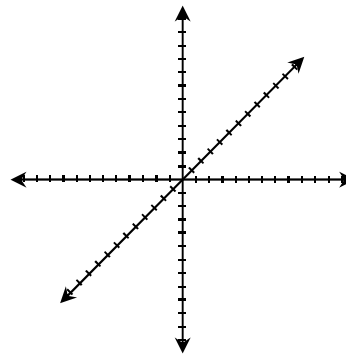
Thoroughly justify answers that are numeric or require calculations.

- Label each grid below using x^+ , x^- , y^+ , y^- , z^+ , and z^- for the given coordinate axis orientation.

Right-Handed



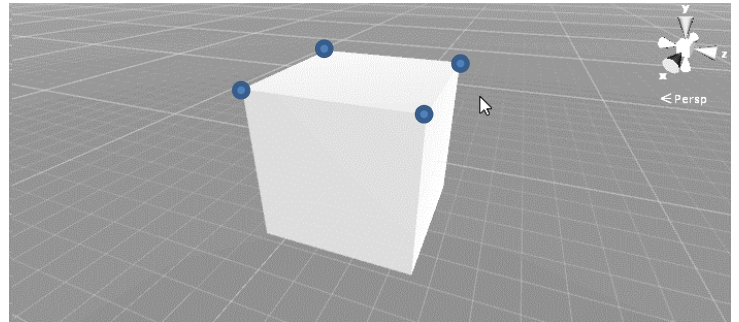
Left-Handed



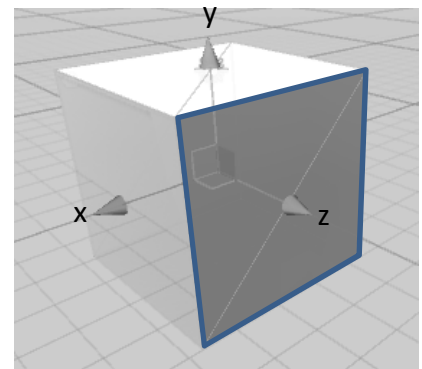
- A cube is added with its center at the origin of the scene. If each edge of the cube is 6 units, find the coordinates of the marked vertices.

(, ,) (, ,)

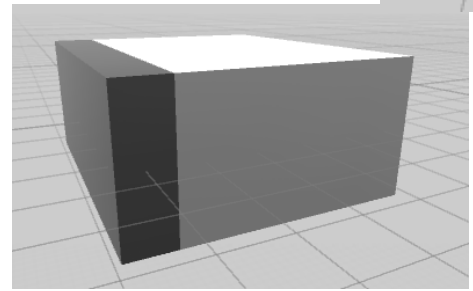
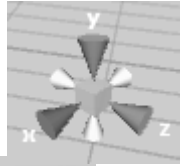
(, ,) (, ,)



- A cube is added to a scene. It is scaled so that each edge has a length of 4. It is then moved so that its center is at $(-5, 20, 10)$. Find the vertices of the marked face of the cube.



4. Two cubes are placed side by side with their congruent sides touching. The first cube has dimensions $4 \times 2 \times 8$ and the second cube has dimensions $4 \times 6 \times 8$. What is the distance between the centers of the cubes?



5. Two opposing corners of a cube in Unity have coordinates of $(8, 2, 10)$ and $(-2, -4, -4)$.

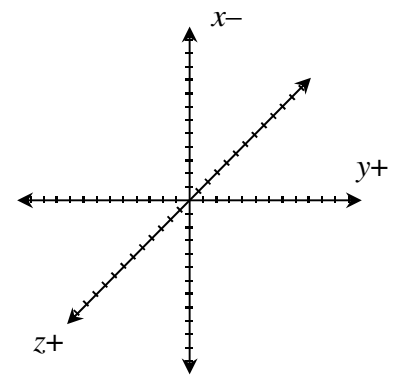
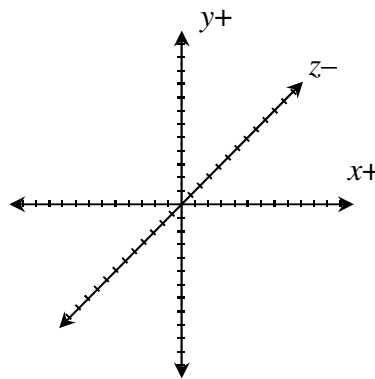
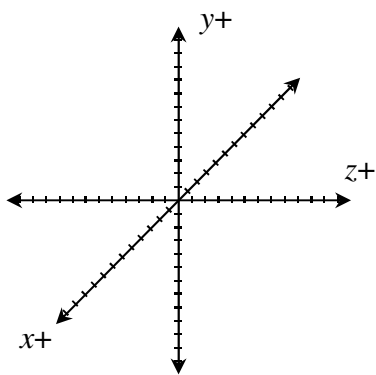
a. What is the location of the cube?

(_____, _____, _____)

b. What is the scale of the cube?

X: _____ Y: _____ Z: _____

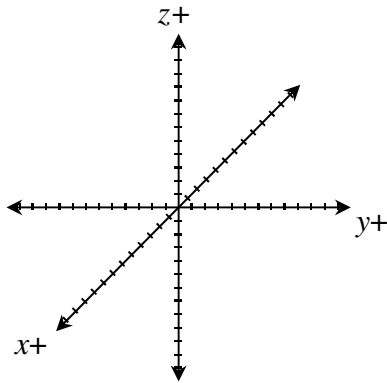
6. Identify whether each coordinate system is left- or right-handed.



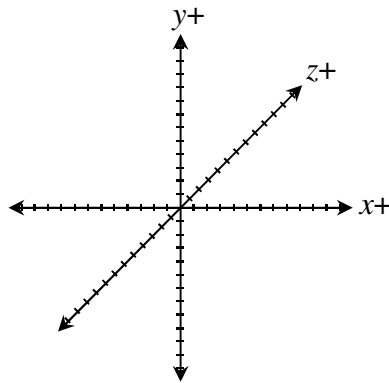
7. Find the distance between the points $(3, -5, 2)$ and $(13, -2, -1)$. Be sure to support your answer.

Plot the point on the given coordinate system. Note that the system is not always in the same orientation.

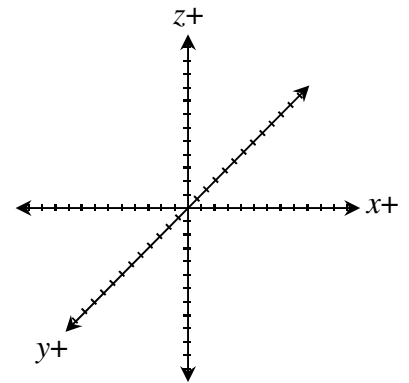
8. $(0, -3, 5)$



9. $(5, 0, -2)$

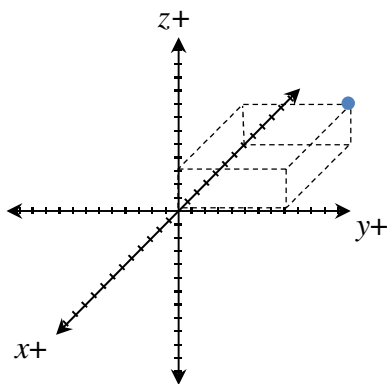


10. $(4, -3, -5)$

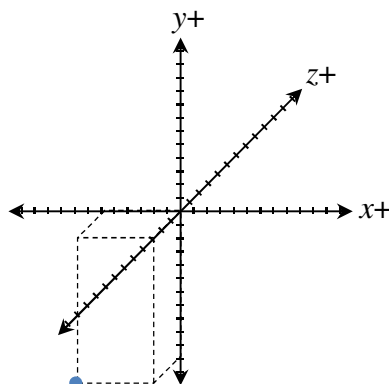


Write the coordinates of the given point. Note that the system is not always in the same orientation.

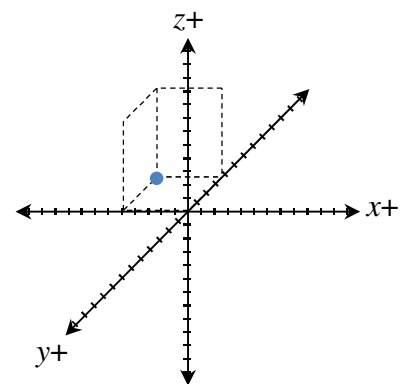
11. $(\underline{\quad}, \underline{\quad}, \underline{\quad})$



12. $(\underline{\quad}, \underline{\quad}, \underline{\quad})$



13. $(\underline{\quad}, \underline{\quad}, \underline{\quad})$



14. Find the distance between the points $(1, -2, 6)$ and $(13, -2, 4)$. Be sure to support your answer.