Vectors in R^2 and R^3 (6.5)

Math Learning Target:

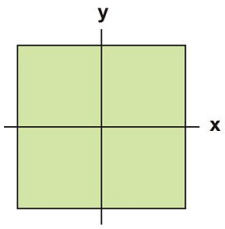
"I can construct a point and a position vector in R , R^2 and R^3 . I can construct various rectangular prisms in three-space. I can state equations of basic planes in three-space. I can apply what I have learned in familiar and unfamiliar settings."

Recall: **Geometric Vector**

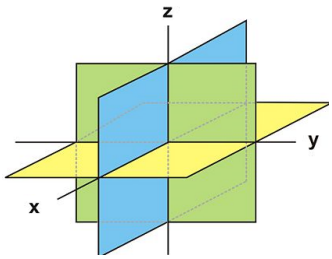
Various Geometric Spaces

R

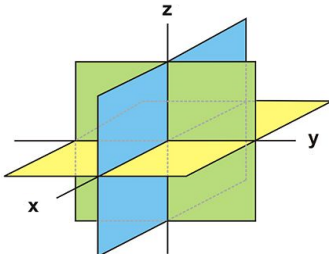
R^2

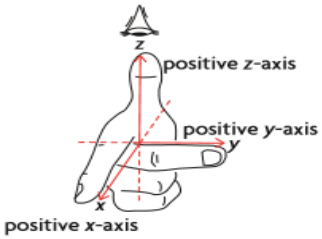


R^3



Right-handed System





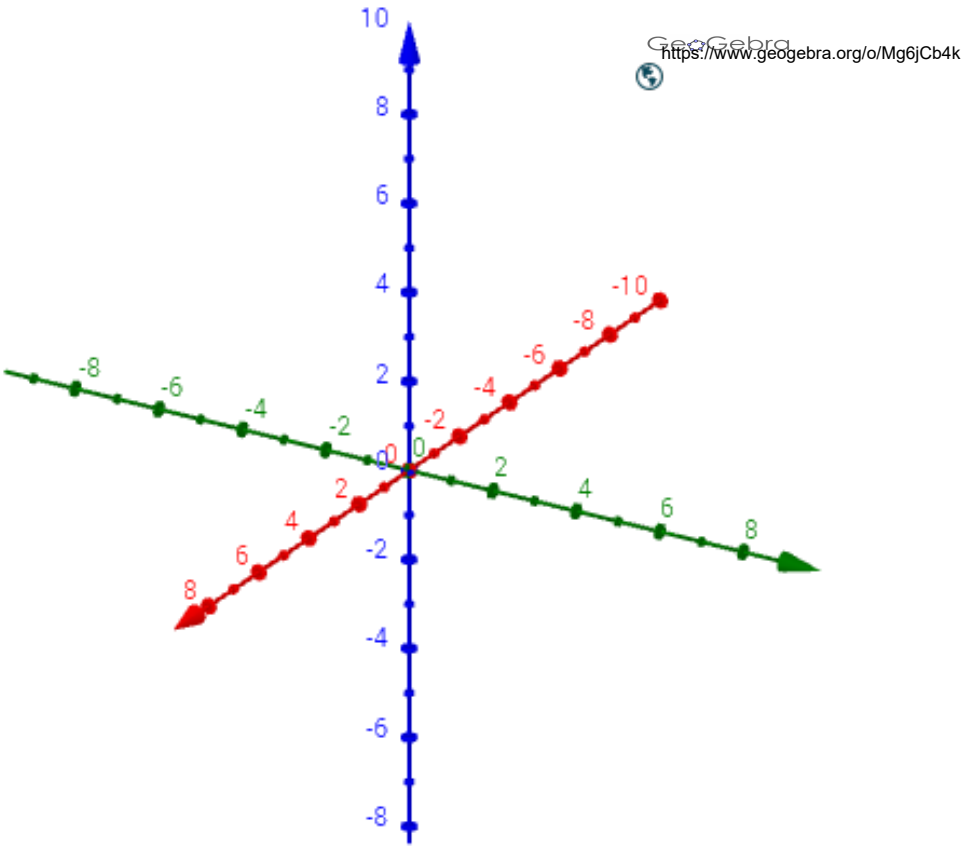
Algebraic Vector

Position Vector

Components

Example

a) Write the equation of the xz –plane
b) Construct the point $P(2,3,-4)$
c) Construct the position vector $\overrightarrow{OP}$
d) Use a rectangular prism to illustrate each coordinate for P
e) State the equation of the plane parallel to the yz –plane containing the point $(2,0,0)$
f) Verify all parts using the GeoGebra link below.



MathSIP! Page 315... #5 (just point *B*), 6, 7, 9, 10c, 11c, 13, 14, 15, 16ac, 18