

PROFESSOR: One important piece of advice. Always, I stress always, use what we call a right-handed coordinate system. And a right-handed coordinate system is defined in the following way. That \hat{x} crossed with \hat{y} equals \hat{z} .

In other words, this positive x direction, positive y direction, positive z direction, this is a right-handed coordinate system. because the unit vector in the x direction, \hat{x} , if I cross that with the unit vector in the y direction, I get this vector.

A left-handed coordinate system, which would be a dreadful thing to use because you can get yourself into very hot water. A left-handed would be this. \hat{y} , \hat{x} , \hat{z} . Now you would have that \hat{x} cross \hat{y} would be minus \hat{z} . You never, ever do that, never. You can only get yourself into trouble.