

If we know the vector A , what now is the vector minus A ?

A equals A of x \sqrt{x} plus A of y \sqrt{y} plus A of z \sqrt{z} . This is the component of A in the x direction, component of A in the y direction, component of A in the z direction.

If you want to know what minus A is, you multiply left and right with a minus sign. So you get minus A equals minus A of x \sqrt{x} minus A of y \sqrt{y} minus A of z \sqrt{z} . Notice that the x component of this vector has flipped 180 degrees.

What was first in the plus x direction, assuming that A of x is positive, is now in the minus x direction. What was first in the plus y direction, assuming that A of y was positive is now in the minus y direction. So each of these individual vectors-- this is a vector in the x direction, this is a vector in the y direction, and this is a vector in the z direction-- each one of these flip over 180 degrees. So the conclusion is that minus A is also flipped 180 degrees relative to plus A .