VECTOR ADDITION(RESULTANTS)
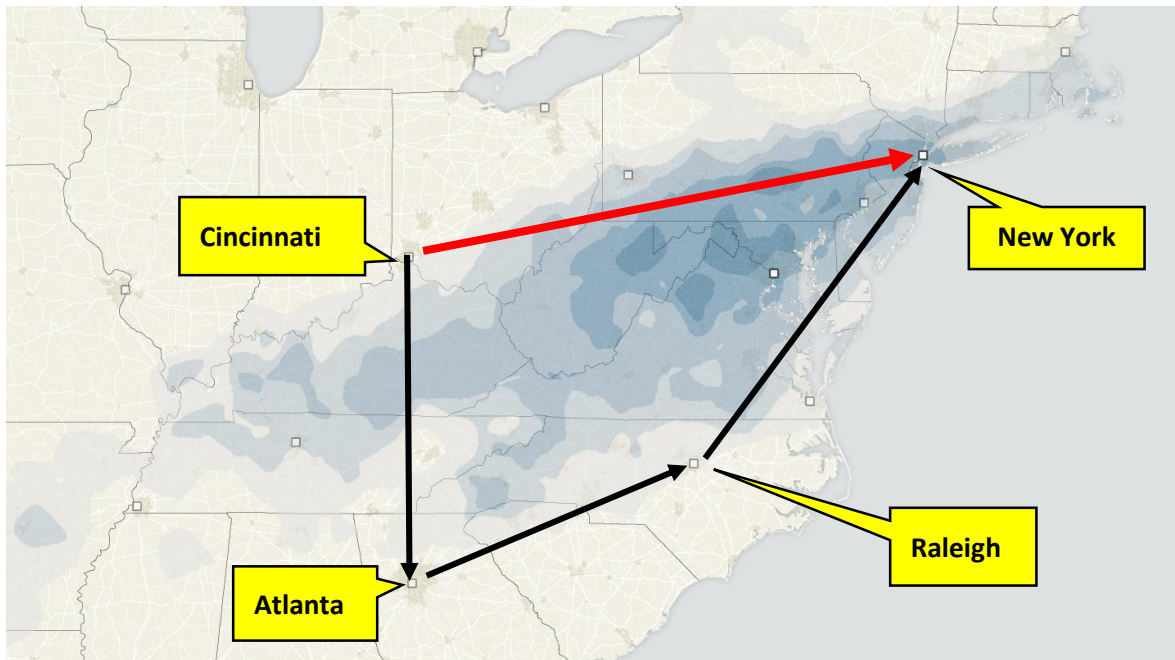
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& New York Times, January 25, 2016   by James Barron & Sarah Maslinnir'

The Blizzard of January 24, 2016 snow depths shown above. Darkest areas had 30 inches of snow or more.

INTRODUCTION : Objective of this application is to find vector displacement from Cincinnati to New York City By adding three vector displacements. Cincinnati to Atlanta is 375 miles due south. Atlanta to Raleigh is 321 miles at 30° north of east. Raleigh to New York City is 424 miles at 52° north of east.

QUESTION: Find resultant displacement Cincinnati to New York City? You need to find both magnitude and direction of the resultant vector.

HINTS: Find X and Y components of the three vectors. Make a grid of the X and Y components of the three Vectors. Add the components in the X and Y direction to find the resultants X and Y components.
Then use Pythagoras and tangent function to find magnitude and direction of the resultant vector.

ANSWER: Cincinnati to New York City = ~ 552 miles @ 12.5° north of east.