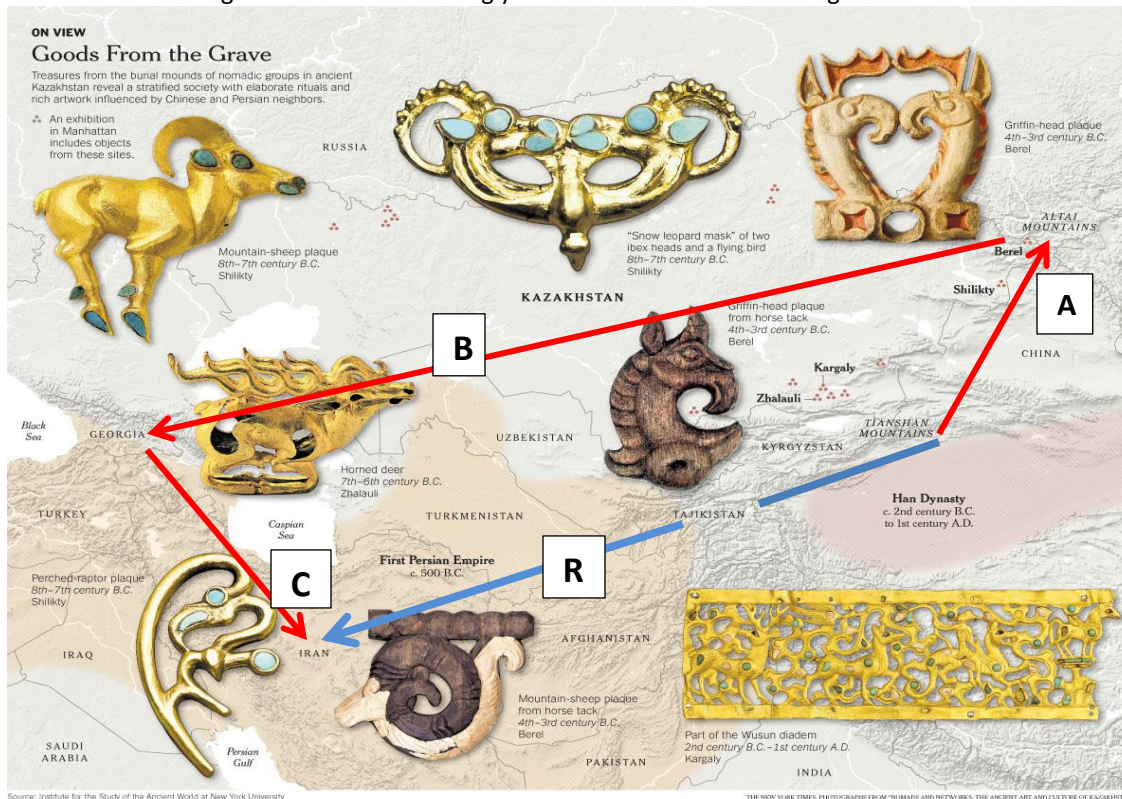


RESULTANT VECTORS

Unit 2 Dr John P. Cise , Professor of Physics, Austin

Community College, 1212 Rio Grande St., Austin Tx 78701 jpcise@austincc.edu & NYTimes March 13, 2012 by John Noble Wilford

Artifacts Show Sophistication of Ancient Nomads Ancient Greeks had a word for the people who lived on the wild, arid Eurasian steppes stretching from the Black Sea to the border of China. ***They were nomads, which meant "roaming about for pasture." They were wanderers*** and, not infrequently, fierce mounted warriors. Essentially, they were "the other" to the agricultural and increasingly urban civilizations that emerged in the first millennium B.C.



INTRODUCTION:

The three vector Displacements are:

- A: 1000 miles @ 53° N of East.
- B: 4000 miles @ 30° S of west.
- C: 500 miles @ 45° S of east.

QUESTION:

Find resultant vector displacement R? Be sure to find the magnitude and direction of R.

HINTS:

In the end you will use pythagoras and Tangent function.

ANSWER: 2952 miles @ 31.8° S of west

As the nomads left no writing, no one knows what they called themselves. To their literate neighbors, they were the ubiquitous and mysterious Scythians or the Saka, perhaps one and the same people. In any case, these nomads were looked down on — the other often is — as an intermediate or an arrested stage in cultural evolution. They had taken a step beyond hunter-gatherers but were well short of settling down to planting and reaping, or the more socially and economically complex life in town. But archaeologists in recent years have moved beyond this mind-set by breaking through some of the vast silences of the Central Asian past.

These excavations dispel notions that nomadic societies were less developed than many sedentary ones. Grave **goods from as early as the eighth century B.C.** show that these people were prospering through a mobile pastoral strategy, maintaining networks of cultural exchange (not always peacefully) with powerful foreign neighbors like the Persians and later the Chinese. Some of the most **illuminating discoveries supporting this revised image are now coming from burial mounds, called kurgans, in the Altai Mountains of eastern Kazakhstan**, near the borders with Russia and China. From the quality and workmanship of the artifacts and the number of sacrificed horses, archaeologists have concluded that these were burials of the society's elite in the late fourth and early third centuries B.C. **By gift, barter or theft, they had acquired prestige goods**, and in time their artisans adapted them in their own impressive artistic repertory.

Almost half of the 250 objects in a new exhibition, **"Nomads and Networks: The Ancient Art and Culture of Kazakhstan"**, are from these burials of a people known as the Pazyryk culture. The material, much of which is on public display for the first time, **can be seen at the Institute for the Study of the Ancient World at New York University, on loan from Kazakhstan's four national museums**