A1 | **Fatima Al Fihri :** First Muslim Woman Mathematics Educator

"Fatima was called the "mother of boys" by the parents of her students."
(Mohammed Yasser Hilali, 2020)

Do Now:

1. Who was Fatima Al Fihiri?

2. What was her contribution in math education?

3. Why did she name the world's oldest university Al Qarawiyyin?

4. How can Fatima Al Fihri's story be used in the fight of stereotypes against Muslim Women Mathematics educators?

5. How are these three people connected: Fatima Al Fihiri, Jacobus Golius and René Descartes?
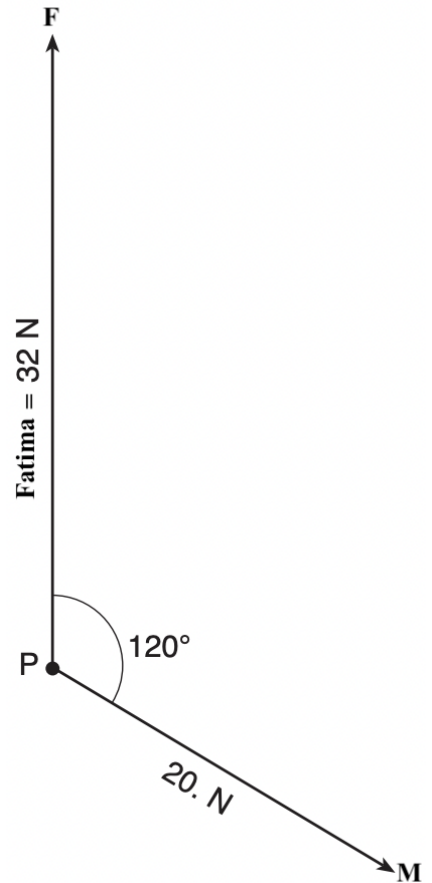
Big Idea:

6. Fatima Al Fihri was physically present during the entire construction of the building which is now known as Al Qarawiyyin University (857 - 859 AD). Her sister Maryam would occasionally visit the construction site. They would often discuss mathematics while they observed the construction of the buildings. One day, Fatima and Maryam attached a rope to a brick and pulled it by changing the angle between them to observe the direction of displacement of the brick. The units reflect modern conventions in vector algebra.

Degrees	0	30	90	120	180
Scenarios					
Predict sum (Magnitude only)					

Use Trigonometry				

7. Fatima and Maryam are pulling an object P. Fatima pulls straight north at 32 N and Maraym pulls 120 degrees SE of Fatima, as shown in the diagram above. Find the resultant in seven different ways.

Protractor		Parallelogram

| Geometry	Trigonometry	Law of Cosine
Law of Sine	Distance Formula	Quadratic Equation

Exit Slip:

Below are 4 pairs of vector components. For each vector, sketch the resultant of the components using the cartesian coordinate below. Assume each box is one meter.

Vector 1 (4,2)	Vector 2 (-2, -5)	Vector 3 (-5,+5)	Vector 4 (1,-5)
P_1 (x,y) (,)	P_2 (x,y) (,)	P_3 (x,y) (,)	P_4 (x,y) (,)

1. Starting from the center of the larger grid to the right, draw an arrow that represents vector 1 then Starting from the end of vector 1, draw and label vector 2. Draw vector 3 starting from the end of vector 2, and then draw vector 4 starting from the end of vector 3.

2) Lastly, draw an arrow that starts at the center of the Cartician Coordinate and ends at the end of vector 4. Label that as "total displacement."
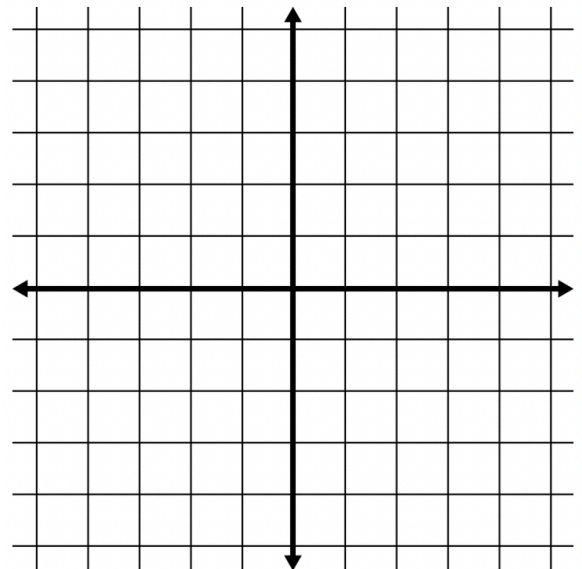
Bibliography:

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