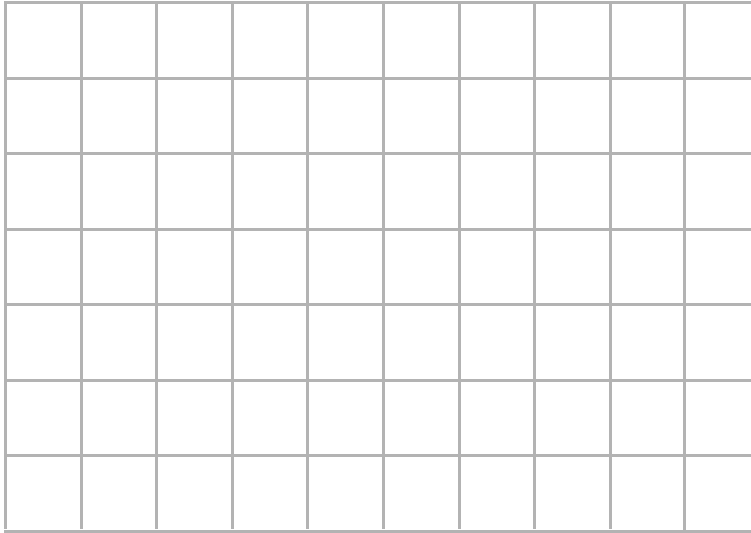


9. Three children were fighting over a cat. One child pulled on the cat with a force of 300 grams south; another applied 200 grams east; the last applied 400 grams at 30.0° north of east. Find the **magnitude** and **direction** of the resultant force on the cat.

Draw a graphical solution on the lines below. Show your final results in the spaces to the right of the diagram. (The lines are spaced 1.00 cm apart.)

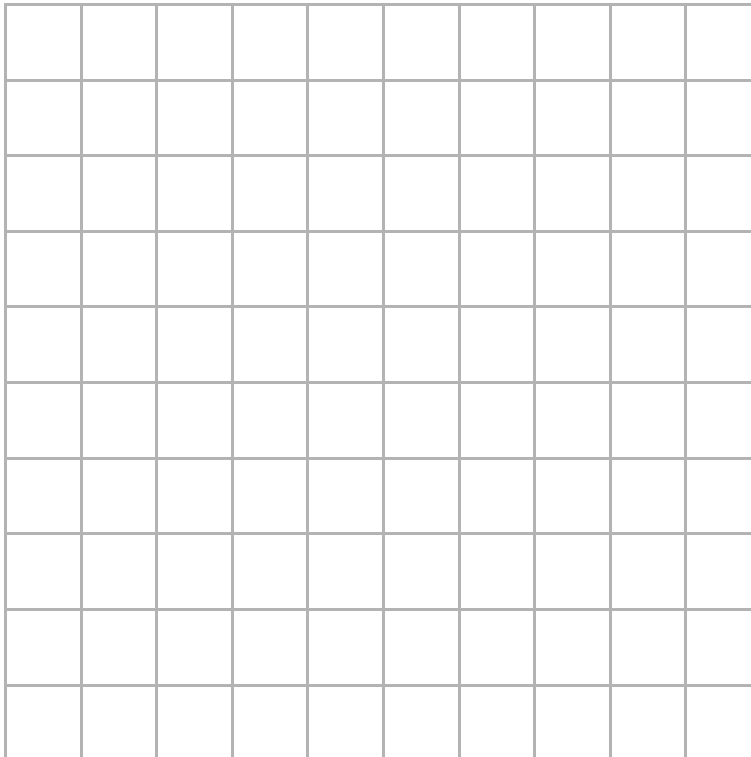


Scale:
1.00 cm equals _____ g

Resultant magnitude:
(in grams)

Resultant direction:
(specify degrees and compass headings)

10. An ocean liner was heading south at 7.00 m/s when it encountered a current which headed west at 4.00 m/s.
- a. Find the magnitude and direction of the liner's resultant velocity by drawing a scale diagram on the lines below. Show your final results in the spaces to the right of the diagram.



Scale:
1.00 cm equals _____ m/s

Resultant speed in m/s:

Resultant direction:
(specify degrees and compass headings)

- b. Use your results to calculate how long it would take the liner to travel 1500 meters along its resultant path. Show your work!
- c. Calculate how far the liner would have travelled directly **south** in that time. Show your work!