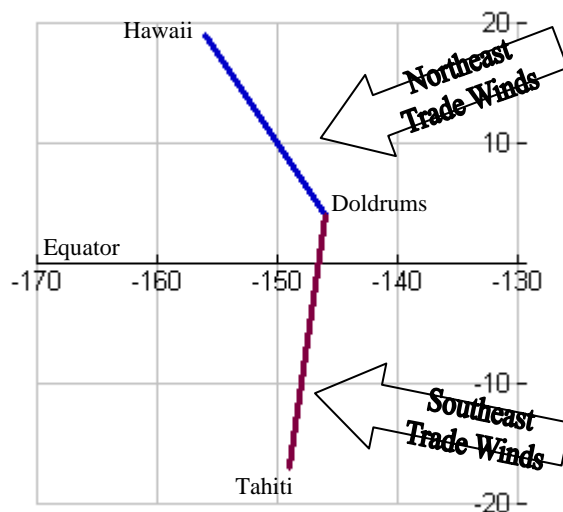


CAUGHT IN THE DOLDRUMS

On May 3, 1976, a team of adventurers, piloted by a Caroline Islands navigator, sailed from Hawaii on a traditional twin-hulled canoe called the Hokule'Al. They were bound for Tahiti. Sailing into northeast trade winds, the canoe maintained a course represented on the chart by $y = -1.5x - 215$. Sailing into southeast trade winds, the canoe maintained a course corresponding to $y = 7x + 1026$.

At the point of intersection of these two paths, the canoe was caught in the “doldrums” and made little headway for 5 or 6 days.

- Find the coordinates of the “doldrums”.
- The equation of the line passing through Hawaii and Tahiti on the chart is $36x + 7y = -5483$. Find the coordinates of Hawaii and Tahiti.
- Assume there are no trade winds. If this is true, the team of adventures should be able to follow the direct path from Hawaii to Tahiti mentioned in part b. By chance there is a small island, called Shimtu, $\frac{3}{8}$ the distance from Hawaii to Tahiti, where they would plan to stop to rest. What are the coordinates of this island?
- Now assume that even though the trade winds affected the trip, the team still wanted to go to the island of Shimtu mentioned in part c to rest. What is the linear equation that represents the path from the doldrums to Shimtu that the canoe should follow?



CAUGHT IN THE DOLDRUMS
TEACHER NOTES

Have students use the map to help them set up the window.

Suggested window settings: XMin = -170, XMax = -130, YMin = -30, YMax = 30.

Answers: a. (-146,4)

b. Hawaii (-156,19) Tahiti (-149,-17)

c. half way between Hawaii and Tahiti: (-152.5, 1)
one-fourth the way from Hawaii to Tahiti: (-154.25, 10)
So three-eighths the way from Hawaii to Tahiti: (-153.375, 5.5)

d. $y \approx -0.2034x - 25.6949$ (found using graphing calculator)