

Transition to College Math

Homework

Unit 2 Lesson 3

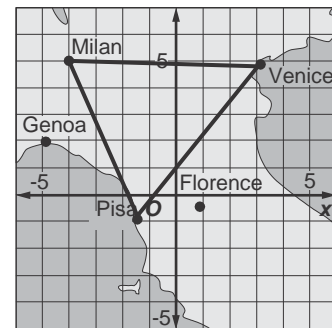
Determinants

Name _____ Date _____ Period _____

1. Archeologists found whale bones at coordinates $(0, 3)$, $(4, 7)$, and $(5, 9)$. If the units of the coordinates are meters, find the area of the triangle formed by these units.

2. The figure shows a map of Italy overlaid on a graph. The coordinates of Milan, Venice, and Pisa are about $(-4, 5)$, $(3.25, 4.8)$, and $(-1.4, -0.8)$, respectively. Each square unit on the map represents about 400 square miles.

What is the area of the triangular region? Round your answer to the nearest square mile.



3. Mark's determinant computation has sign errors. Circle the signs that must be reversed.

$$\begin{vmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{vmatrix} = 1(5)(9) - 2(6)(7) + 3(4)(8) - 3(5)(7) + 1(6)(8) - 2(4)(9)$$

4. Kyle is making a parallelogram with vertices at $(-6, 0)$, $(0, -y)$, $(6, 0)$, and $(0, y)$, and $y > 0$. He plans to make the parallelogram using a material that costs \$2 for every square unit.

a. Write the determinant that gives the area of this parallelogram.

b. Evaluate the determinant you wrote for part a and determine the value of y that results in a \$120 parallelogram