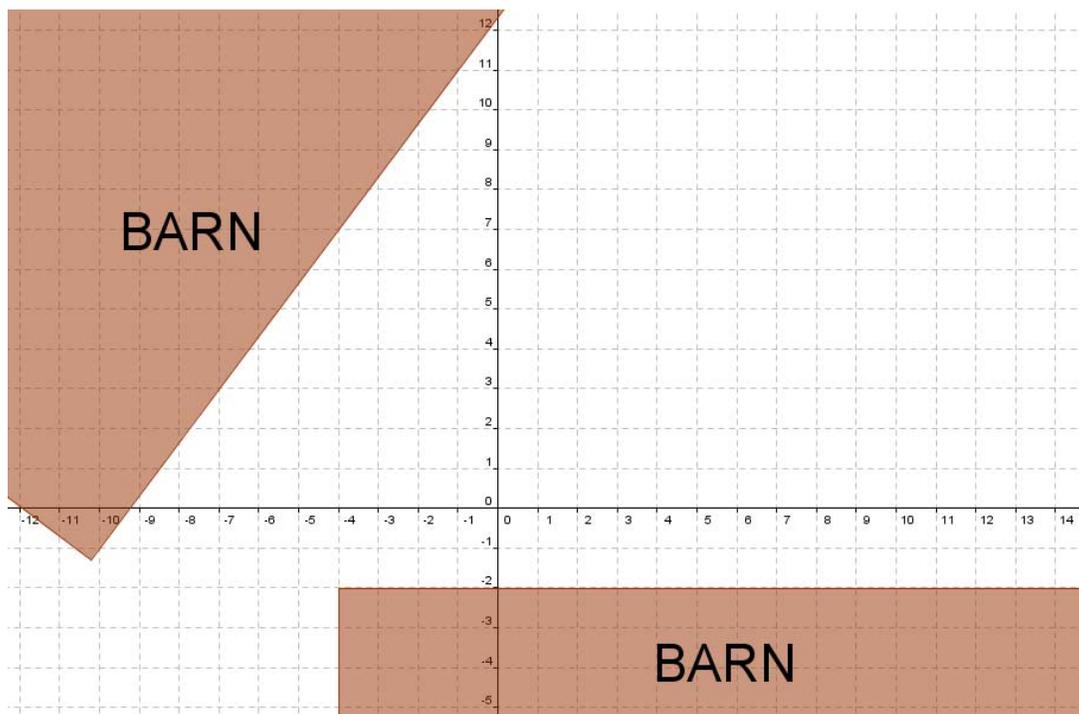


Standard(s) of Learning

- G.3 The student will use pictorial representations, including computer software, constructions, and coordinate methods, to solve problems involving symmetry and transformation. This will include
 - a) investigating and using formulas for finding distance, midpoint, and slope;
 - b) applying slope to verify and determine whether lines are parallel or perpendicular.
- G.9 The student will verify characteristics of quadrilaterals and use properties of quadrilaterals to solve real-world problems.
- G.13 The student will use formulas for surface area and volume of three-dimensional objects to solve real-world problems.
- G.14 The student will use similar geometric objects in two- or three-dimensions to
 - d) solve real-world problems about similar geometric objects.

Collecting Rainwater

A farmer is adding two enclosed containers to collect rainwater on his farm. In order to make sure the containers are placed at precise locations beside two barns, he uses a coordinate system to build the containers.



The base of the first container connects vertices A, B, C, and D as listed:

A(-7, 3)

B(-3, 0)

C(3, 8)

D(-1, 11)

- 3) The first container (with base ABCD) is an enclosed prism that has a special quality: the number of square units in the surface area is equal to the number of cubic units in the volume. Find the height of the container. Justify your answer mathematically.**