

A whimsical landscape with a blue sky, a large tree on the left, and various mathematical symbols like pi, infinity, and numbers scattered around. Donald Duck is partially visible on the left. The title text is overlaid in the center.

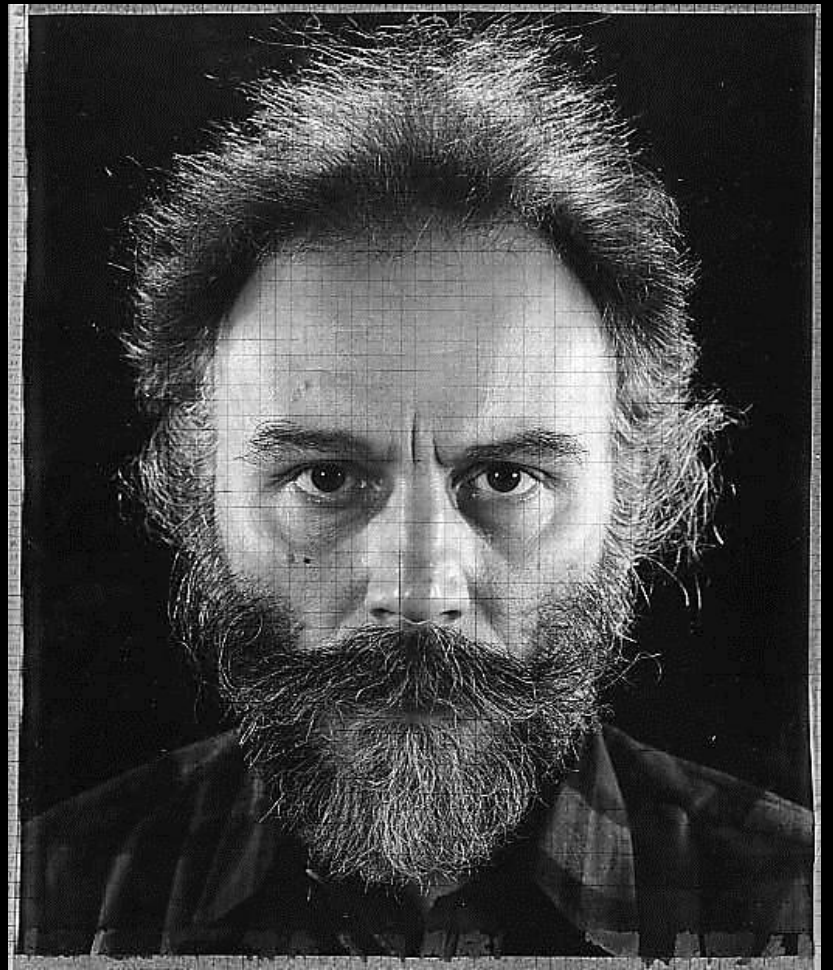
DONALD IN

**MATHMAGIC
LAND**

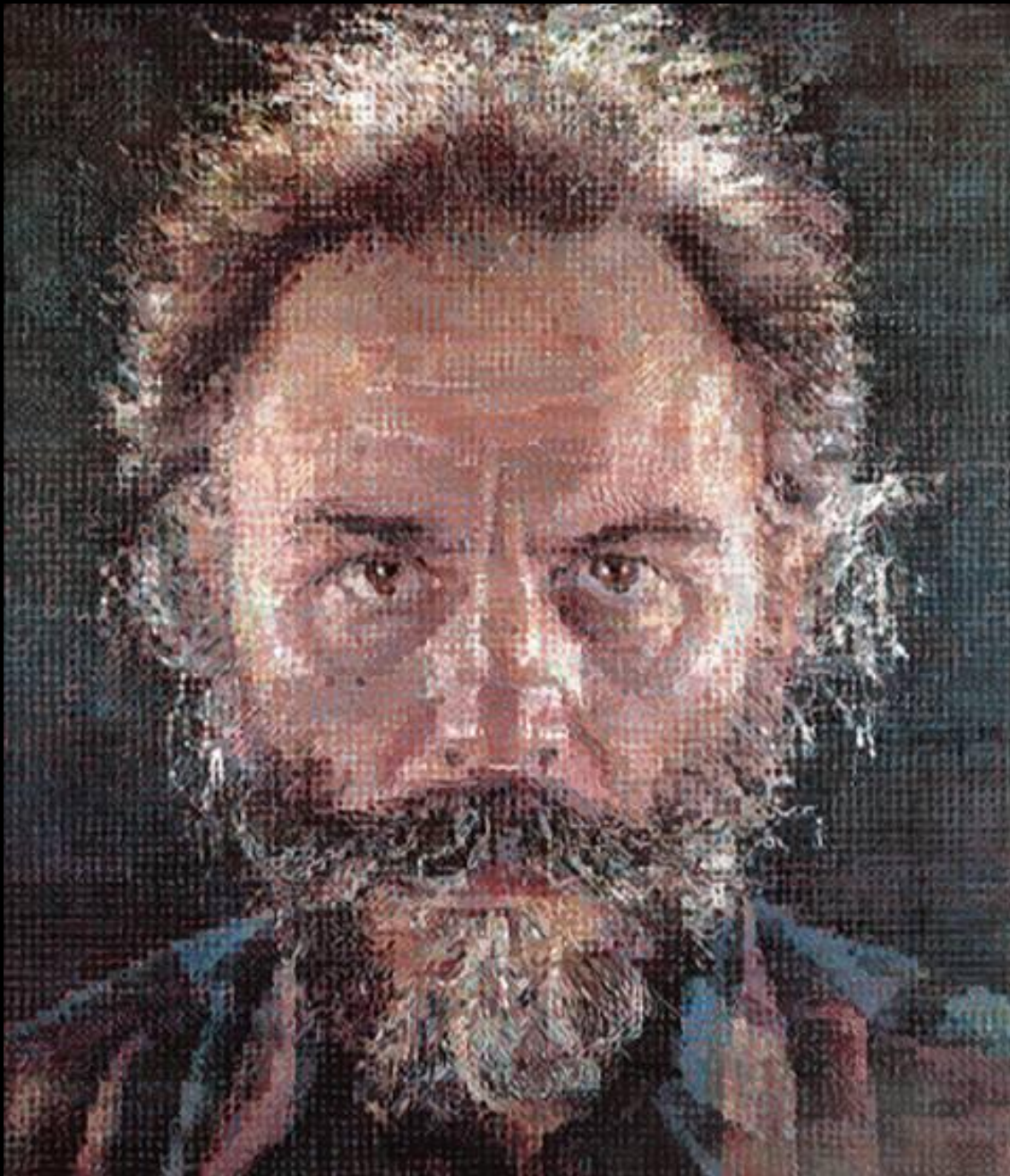
Technicolor®



Ostrakon of Senenmut, ca. 1473–1458 B.C.E. Dynasty
18, reign of Hatshepsut
Egyptian; Thebes
Painted limestone; 8 7/8 x 7 1/4 in. (22.5 x 18.1 cm)
Rogers Fund, 1936 (36.3.252)



Study for "Lucas", 1987
Chuck Close (American, born Monroe, Washington, 1940)
Photograph, and graphite and tape pasted on cardboard
H. 24, W. 29 inches (61 x 73.7 cm.)
Gift of Leslie and Chuck Close, 1987 (1987.329)



Chuck Close (American, born 1940)
Lucas, 1986–87
Oil and pencil on canvas; 100 x 84 in.
(254 x 213.4 cm)
Purchase, Lila Acheson Wallace Gift
and Gift of Arnold and Milly Glimcher,
1987 (1987.282)

© 2003 Chuck Close

2010-2011

Introduction to art and math (pattern, proportion, perspective)

Math as artifact (ancient world)

Time and distance (aerial perspective)

Linear perspective

Music, art, and math (instrument collection)

2011-2012

African art and math (pattern, abstraction)

Islamic Art (geometry and star patterns)

Islamic Art (symmetry and carpets)

American textiles

Architecture around the Museum

2012-2013 (proposed)

Modern art

Frank Lloyd Wright

Make sense of problems and persevere in solving them.

Reason abstractly and quantitatively.

Construct viable arguments and critique the reasoning of others.

Model with mathematics.

Use appropriate tools strategically.

Attend to precision.

Look for and make use of structure.

Look for and express regularity in repeated reasoning.



Navajo loom adapted from the Pueblo and used to weave wool from churro sheep



Wearing Blanket, 1840-1860

Navajo

United States, Arizona or New Mexico

Wool; H. 60 in. x W. 71 in.

The Michael C. Rockefeller Memorial Collection,

Bequest of Nelson A. Rockefeller, 1979

Wearing Blanket, 1860-1870

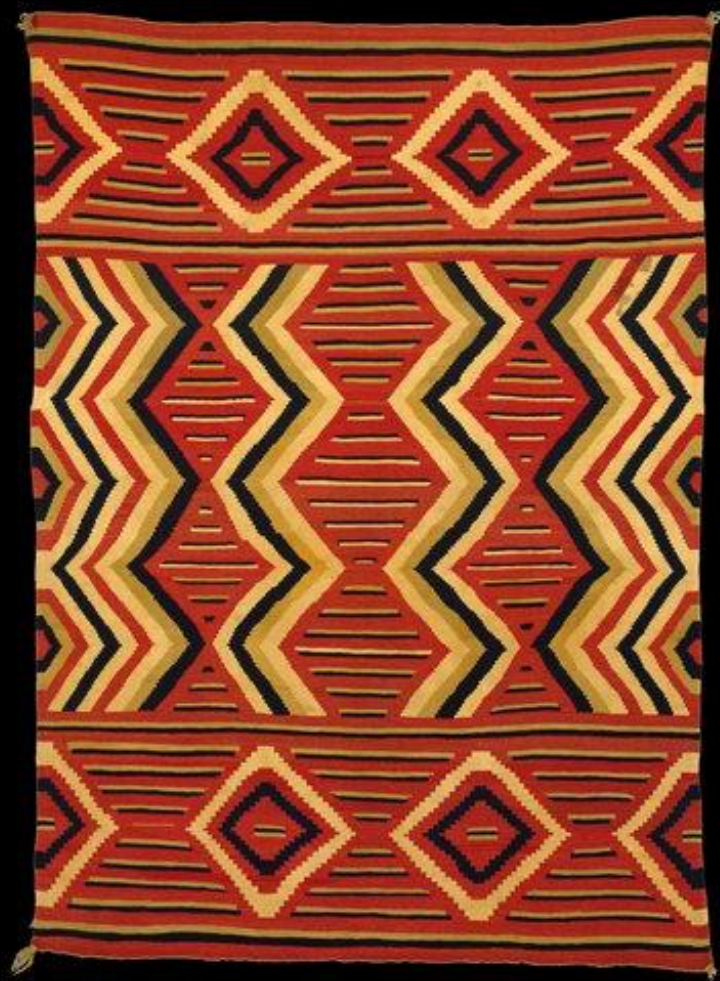
Navajo

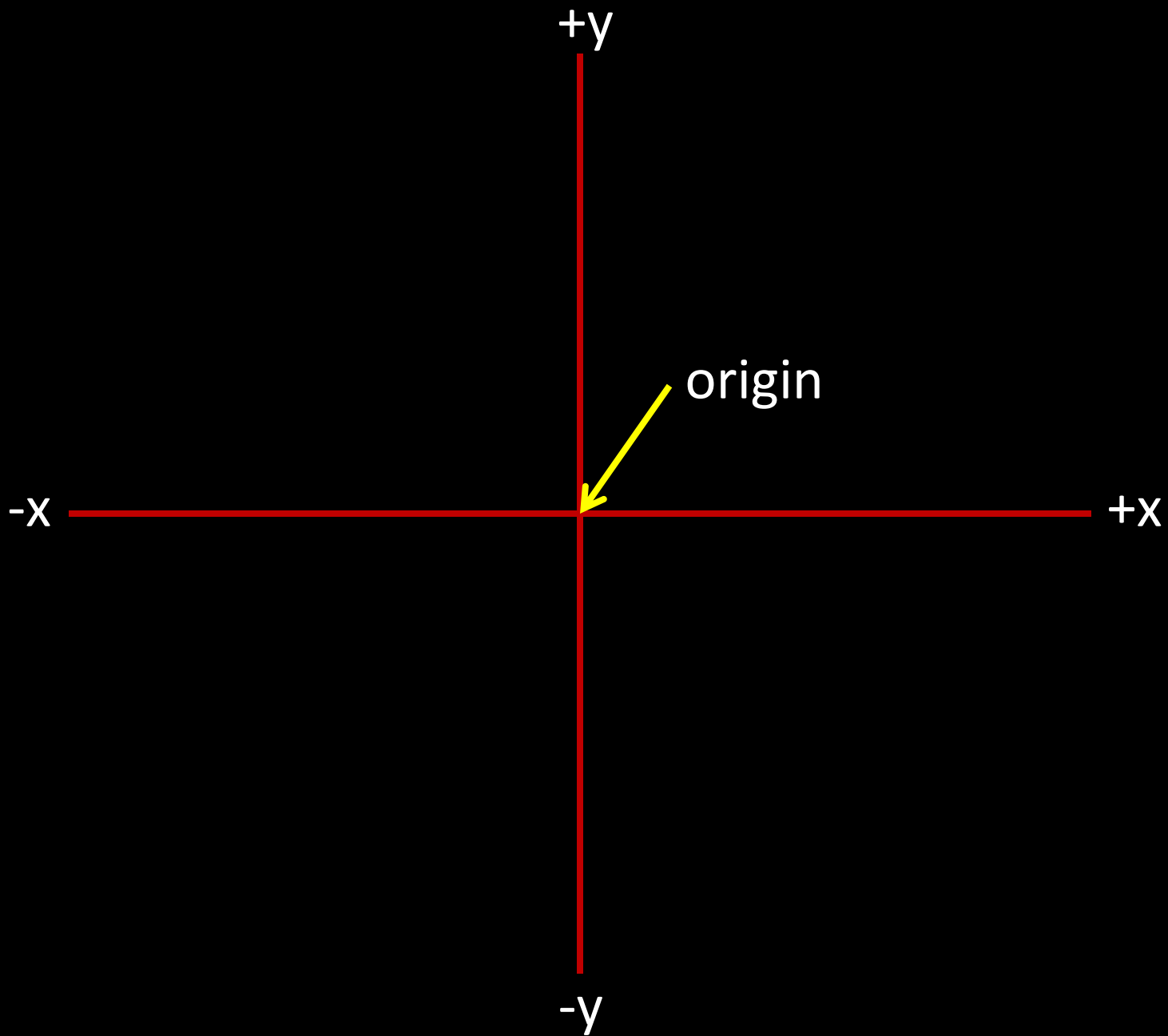
United States, Arizona

Wool; H. 69 x W. 48 x D. 69 in. (175.3 x 121.9 x 175.3 cm)

The Michael C. Rockefeller Memorial Collection, Bequest of

Nelson A. Rockefeller, 1979 (1979.206.1039)





Before creating the design, the weaver marks two places on the rug (usually using chalk):

1) By counting the warp strands and dividing by two, she finds the horizontal center of the rug.

This is the equivalent of finding $X = 0$.

2) Using a loose strand of yarn, she determines the total height that the rug will be. She then folds the yarn in half, and uses this measure to mark the vertical center of the rug.

This is the equivalent of finding $Y = 0$.

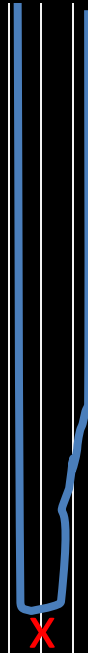
While weaving, the weaver will often count the number of wefts in each design element to ensure that the rug to the right of the center is an exact reflection of the rug's left side. At the vertical center, the weaver often reflects the design across the X axis. This process of counting to keep track of where design elements are to be placed is crucial for making the rugs symmetrical in appearance.

Count the warp threads, divide by two, and mark the center one with chalk or a short piece of yarn anywhere along its length.



x

Measure the length of the warp threads with a piece of string. Fold the string in half and use it to find the center. Push the yarn marker up to that point.





So-called Antioch Mosaic, second half of 2nd century; Late Antonine Roman

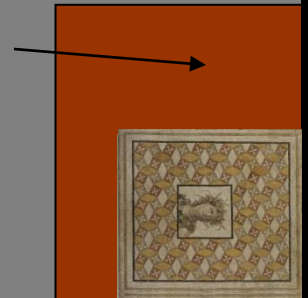
Mosaic; H. 7 ft. 5 in. (2.26 m)

Purchase, Joseph Pulitzer Bequest, 1938 (38.11.12)

Middle school gymnasium 74' x 42'

Average classroom
32' x 30'

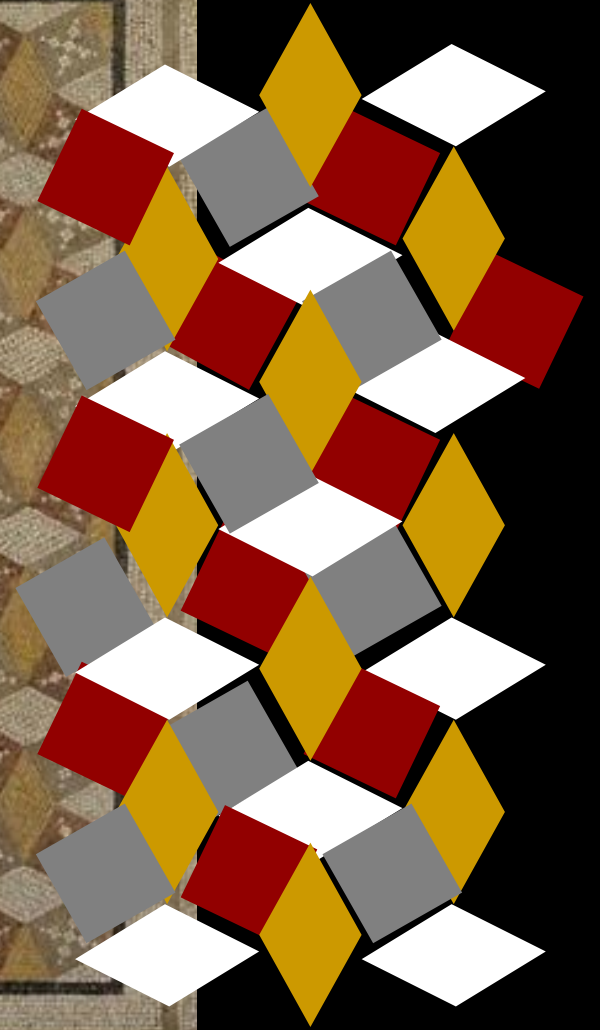
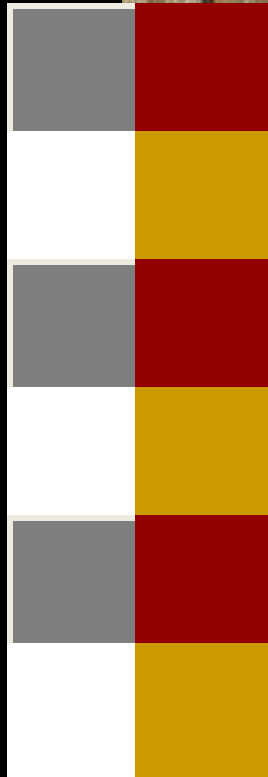
Average bedroom
12' x 10'

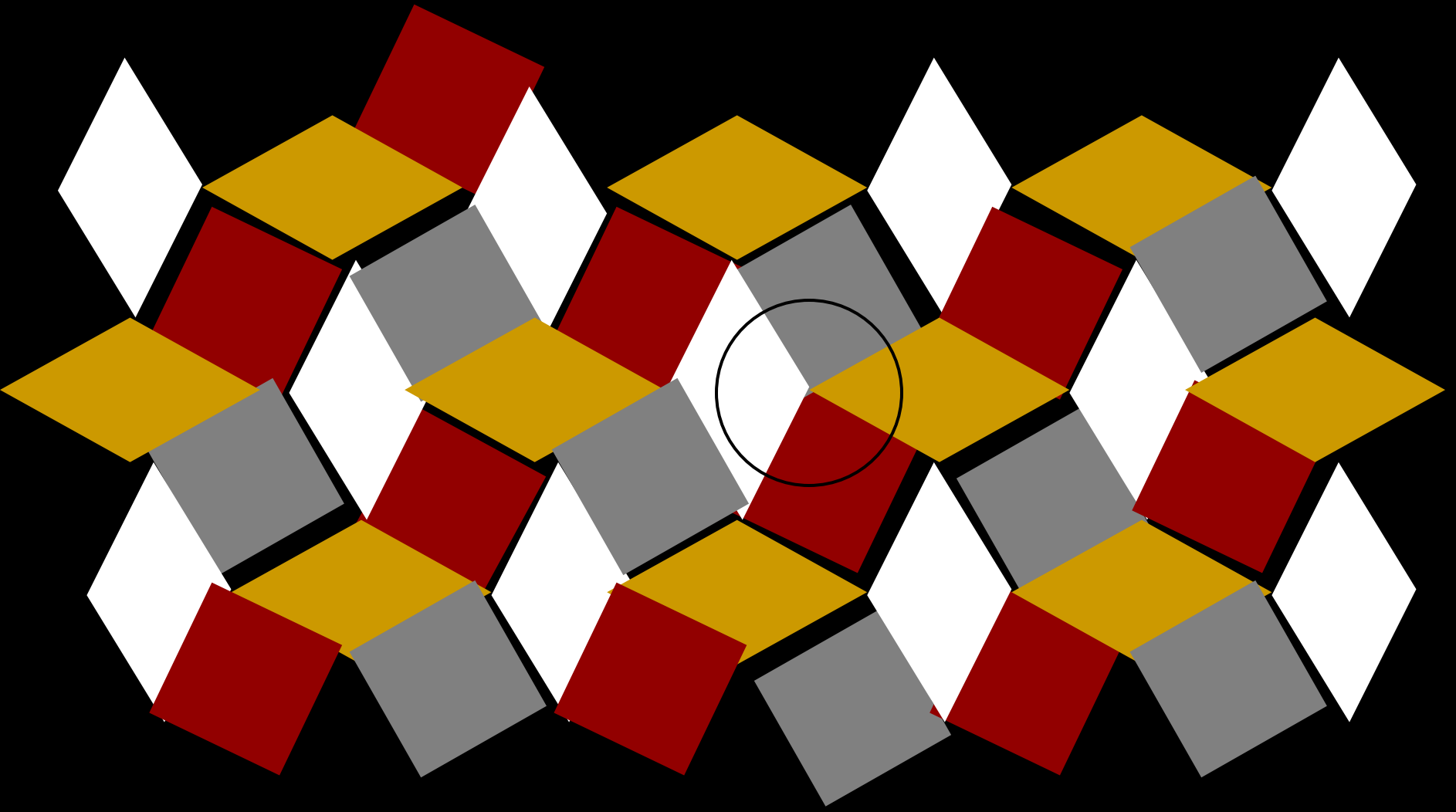


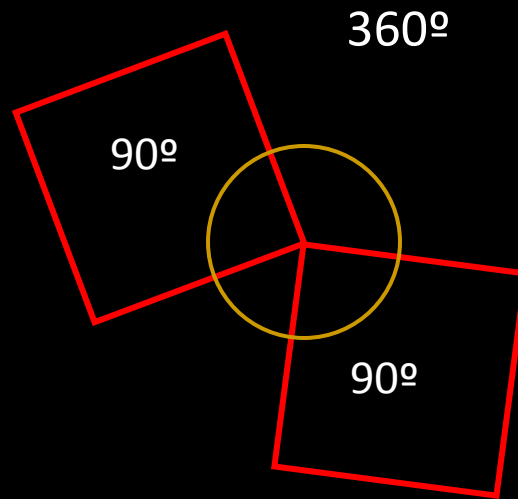
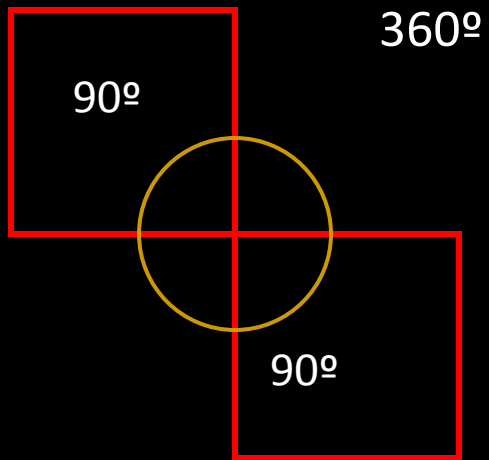












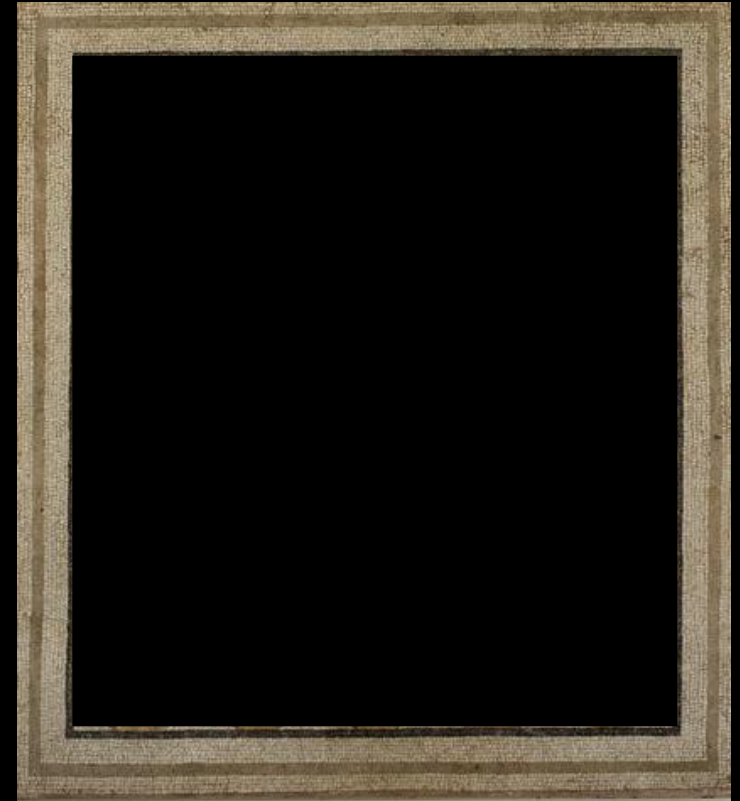
What does changing these angles do to the grid?



A.



B.



C.

Which section would you install first?

Which section of the mosaic will take the most time to complete?

Which section will require the most skilled workmen?

Which section do you think will cost the most?

