

Ellipse

Calculation



20 x 59,8 mm

MATH

1

Create a new object
(I. Embroidery-Objects
tutorial).



Equation of the ellipse:
 $(x - m_x)^2 \div a^2 + (y - m_y)^2 \div b^2 = 1$

m_x is the x-coordinate of the
center.

m_y is the y-coordinate of the
center.

The **width** is the double of a.
The **height** is the double of b.

2

When scene starts

Set variable

m_x

to 200

Set variable

m_y

to 400

Set variable

a

to 150

Set variable

b

to 50

Set variable

ykoord

to -"b" + "m_y"

Place at x: "m_x" y: "ykoord"

Start running stitch with length 10

3

If it doesn't work, control the
bricks.

This part belongs to
point 2.

Repeat "b" × 2 + 1 times

Place at x: square root... y: "ykoord"

Change variable

ykoord

by 1

End of loop

Change variable

ykoord

by -1

Repeat "b" × 2 + 1 times

Place at x: - square roo... y: "ykoord"

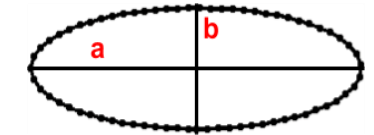
Change variable

ykoord

by -1

End of loop

Stitch



Calculate the x-coordinate
for the right side.

Reshape the equation of the ellipse:

Place at x: "m_x" y: "ykoord"

$\text{square root}((1 - ("ykoord" - "m_y") \times ("ykoord" - "m_y") \div ("b" \times "b")) \times "a" \times "a") + "m_x"$

Tip: You find the math functions in
„Functions“ in the formal editor.

Calculate the x-coordinate
for the left side of the ellipse.

Place at x: - square roo... y: "ykoord"

$-\text{square root}((1 - ("ykoord" - "m_y") \times ("ykoord" - "m_y") \div ("b" \times "b")) \times "a" \times "a") + "m_x"$