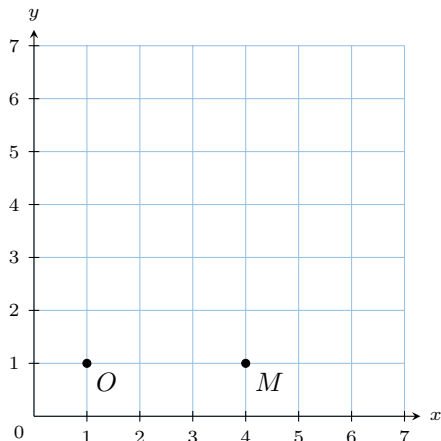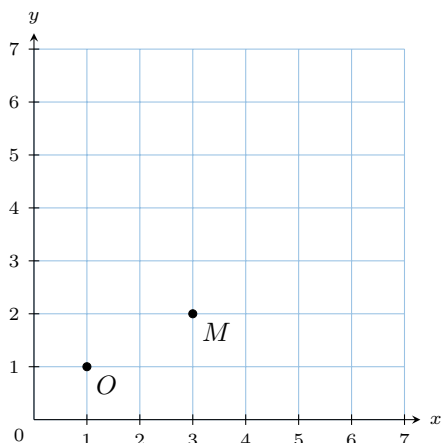# HOMOTHETY

A WHAT IS A HOMOTHETY?

A.1 FINDING THE IMAGE OF A POINT

Ex 1: Find the coordinates of the image of point M under a homothety with center O and scale factor $k = 2$.
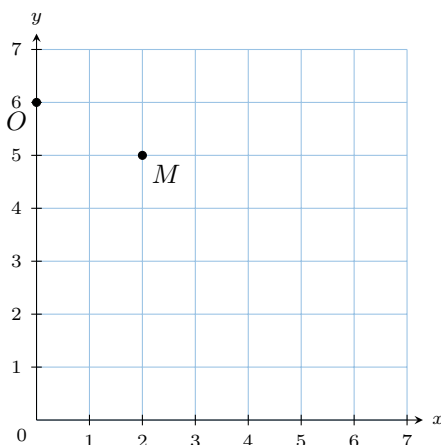

$M'(\boxed{},\boxed{})$

Ex 2: Find the coordinates of the image of point M under a homothety with center O and scale factor $k = 2$.

$M'(\boxed{},\boxed{})$

Ex 3: Find the coordinates of the image of point M under a homothety with center O and scale factor $k = 3$.

$M'(\boxed{},\boxed{})$
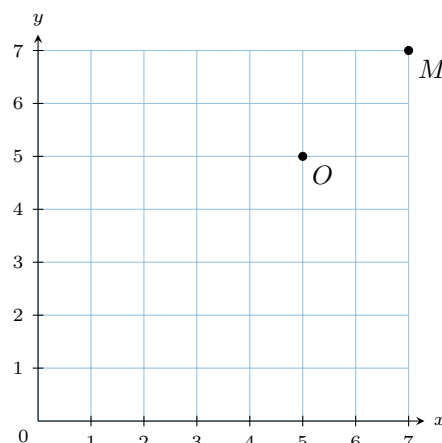
Ex 4: Find the coordinates of the image of point M under a homothety with center O and scale factor $k = -1$.
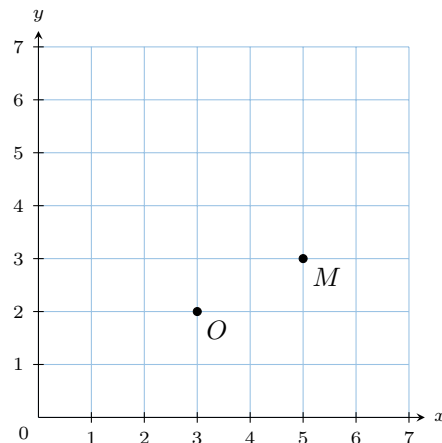
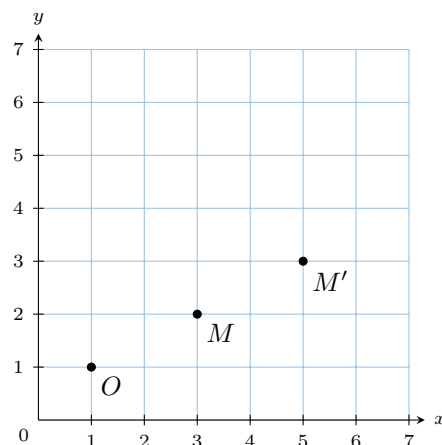$M'(\boxed{},\boxed{})$

Ex 5: Find the coordinates of the image of point M under a homothety with center O and scale factor $k = -2$.

$M'(\boxed{},\boxed{})$

A.2 FINDING THE SCALE FACTOR

Ex 6: The point M' is the image of the point M by homothety of center O and scale factor k.
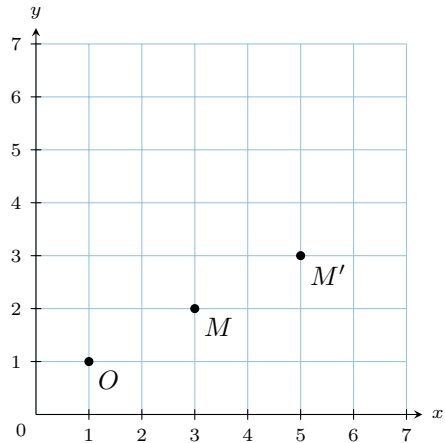

1

Find the scale factor.

$$k = \boxed{}$$

Ex 7: The point M' is the image of point M under a homothety with center O and scale factor k.
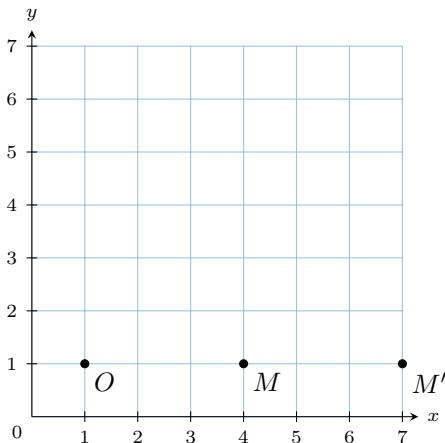
Find the scale factor.

$$k = \boxed{}$$

Ex 8: The point M' is the image of point M under a homothety with center O and scale factor k.

Find the scale factor.

$$k = \boxed{}$$

Ex 9: The point M' is the image of point M under a homothety with center O and scale factor k.
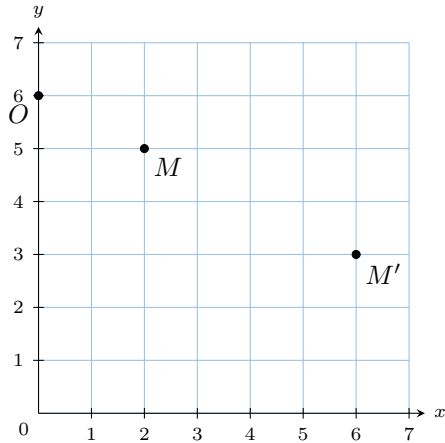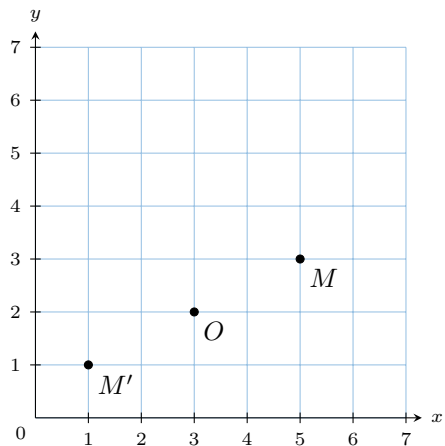

Find the scale factor.

$$k = \boxed{}$$

Ex 10: The point M' is the image of point M under a homothety with center O and scale factor k.

Find the scale factor.

$$k = \boxed{}$$

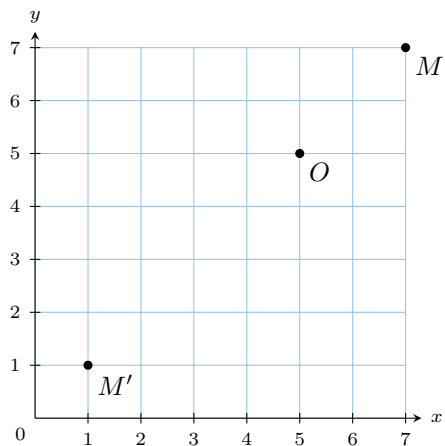**Ex 11:** The point M' is the image of point M under a homothety with center O and scale factor k.
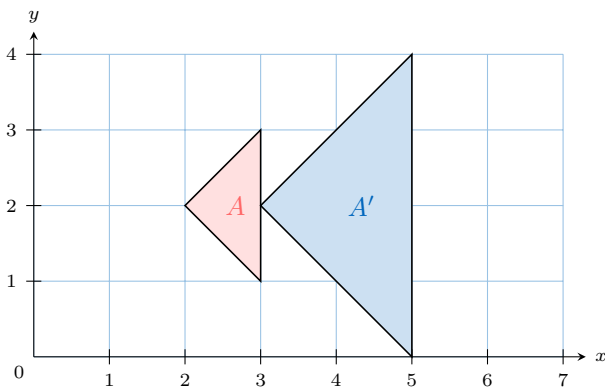

Find the scale factor.

$$k = \boxed{}$$

A.3 FINDING THE CENTER

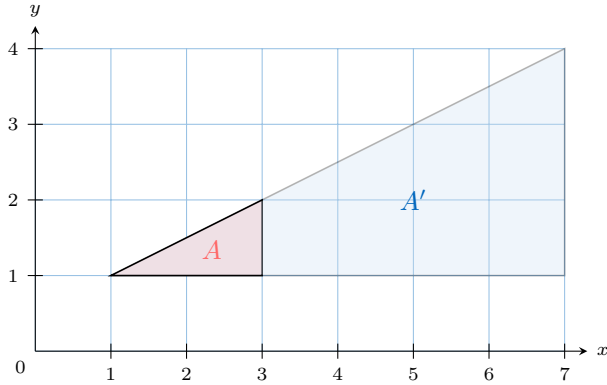**Ex 12:** The figure A' is the image of figure A under a homothety with center O and scale factor $k = 2$.

Find the coordinates of the center O.
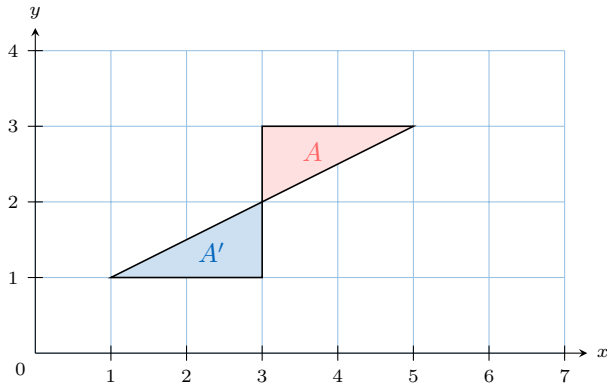
$$O(\boxed{},\boxed{})$$

Ex 13: The figure A' is the image of figure A under a homothety with center O and scale factor $k = 3$.

Find the coordinates of the center O.

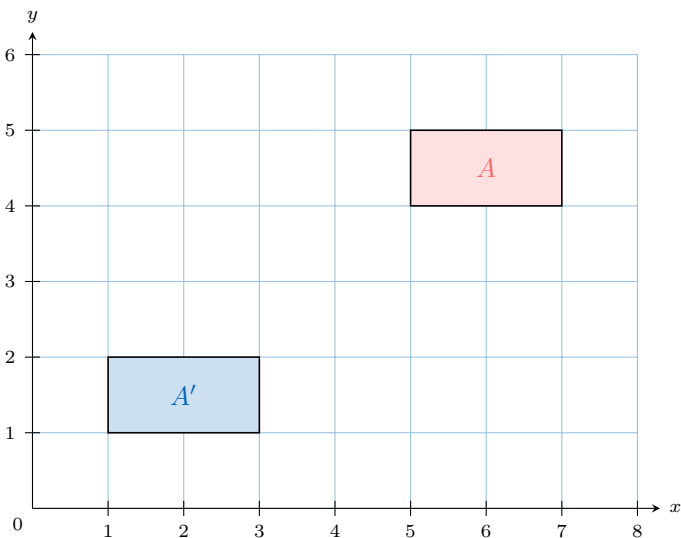$$O(\boxed{},\boxed{})$$

Ex 14: The figure A' is the image of figure A under a homothety with center O and scale factor $k = -1$.

Find the coordinates of the center O.

$$O(\boxed{},\boxed{})$$

Ex 15: The figure A' is the image of figure A under a homothety with center O and scale factor $k = -1$.

Find the coordinates of the center O.

$$O(\boxed{},\boxed{})$$

A.4 FINDING THE SCALE FACTOR

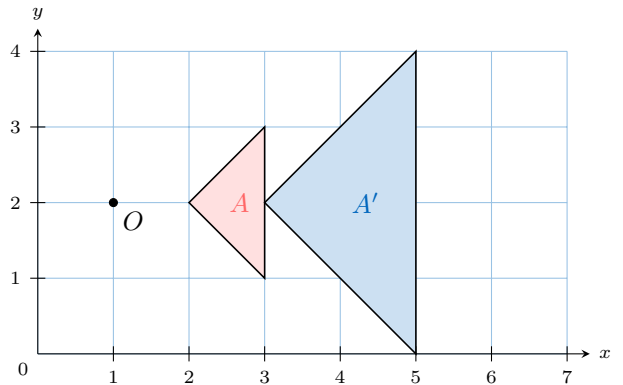**Ex 16:** The figure A' is the image of figure A under a homothety with center O and scale factor k.
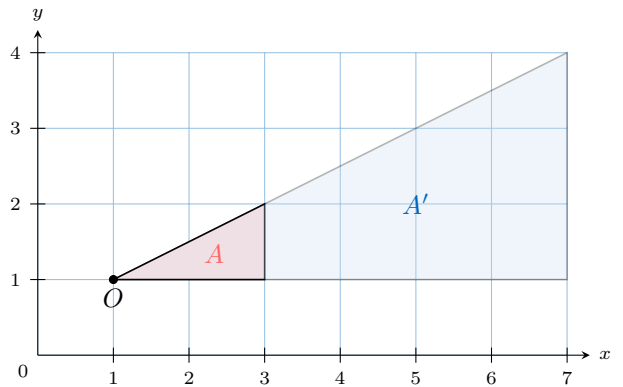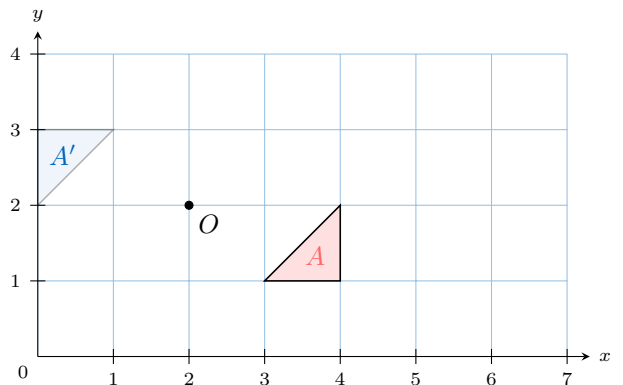

Find the scale factor.

$$k = \boxed{}$$

Ex 17: The figure A' is the image of figure A under a homothety with center O and scale factor k.
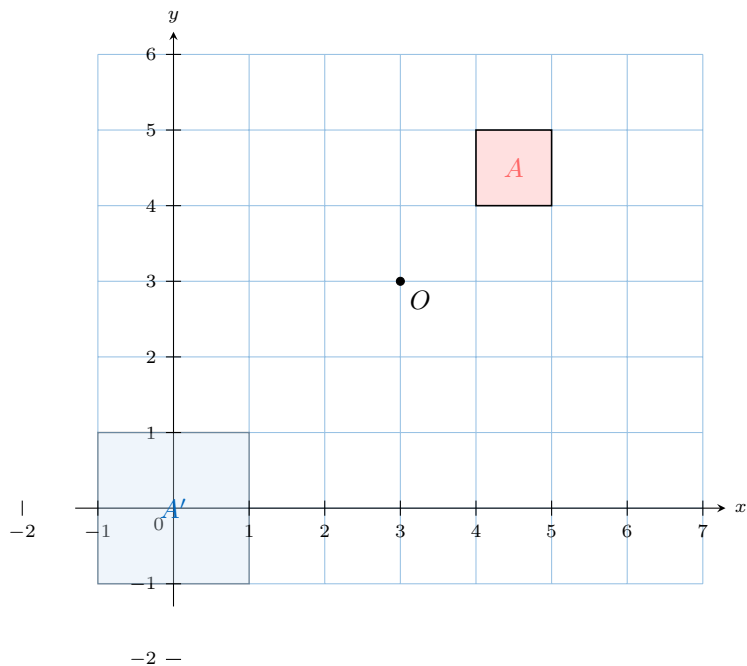

Find the scale factor.

$$k = \boxed{}$$

Ex 18: The figure A' is the image of figure A under a homothety with center O and scale factor k.

Find the scale factor.

$$k = \boxed{}$$

Ex 19: The figure A' is the image of figure A under a homothety with center O and scale factor k.
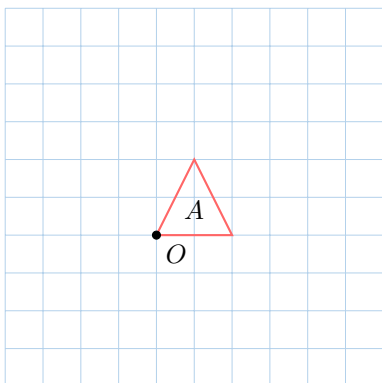
Find the scale factor.

$$k = \boxed{}$$
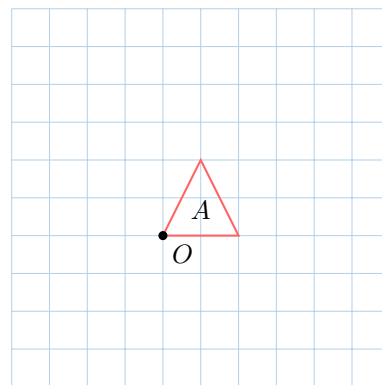
A.5 DRAWING IMAGES FIGURES

Ex 20: Draw the figure A', the image of figure A under a homothety with center O and scale factor $k = 2$.
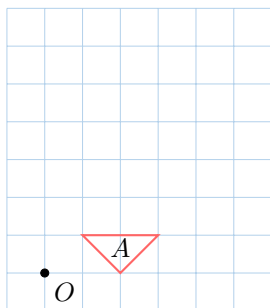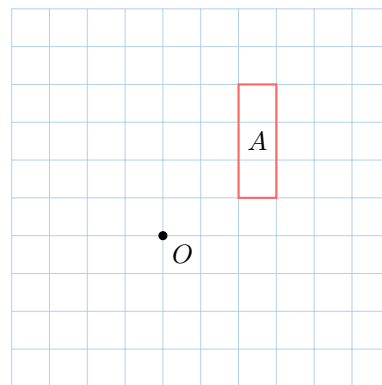

Ex 21: Draw the figure A', the image of figure A under a homothety with center O and scale factor $k = 3$.

Ex 22: Draw the figure A', the image of figure A under a homothety with center O and scale factor $k = -2$.
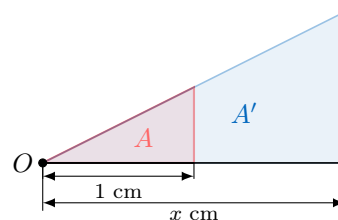

Ex 23: Draw the figure A', the image of figure A under a homothety with center O and scale factor $k = -1$.
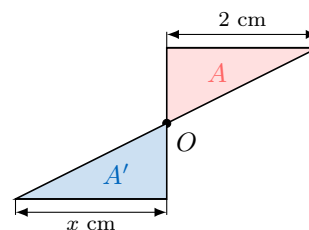

A.6 FINDING AN UNKNOWN LENGTH

Ex 24: The figure A' is the image of figure A under a homothety with center O and scale factor $k = 2$.
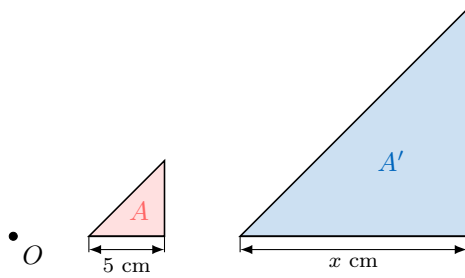

Find x.

$$x = \boxed{}$$

Ex 25: The figure A' is the image of figure A under a homothety with center O and scale factor $k = -1$.

Find x.

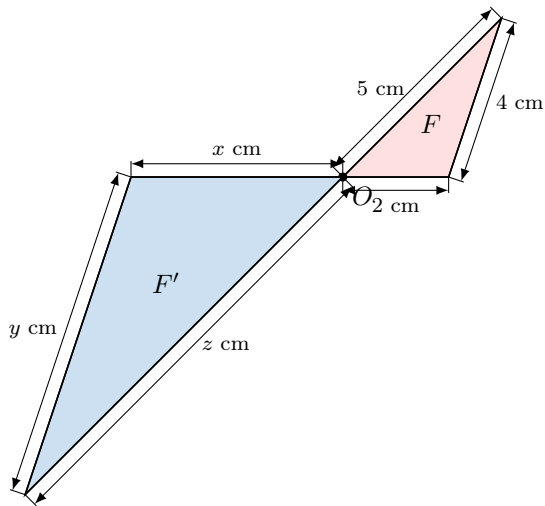$$x = \boxed{}$$

Ex 26: The figure A' is the image of figure A under a homothety with center O and scale factor $k = 3$.

Find x.

$$x = \boxed{}$$

Ex 27: The figure A' is the image of figure A under a homothety with center O and scale factor $k = -2$.

Find x, y, z.

$$x = \boxed{}, \; y = \boxed{}, \; z = \boxed{}$$