ENLARGEMENT

Scale factors

Centre of enlargement

Scale factors

- Indicates how much to enlarge or reduce the original.

- Formula = image length divided by object length.

3 cm

object

9 cm

Image

3 cm   9 cm

The image length = 9 cm

The object (original) length = 3 cm

Therefore the scale factor is 9 / 3 = 3

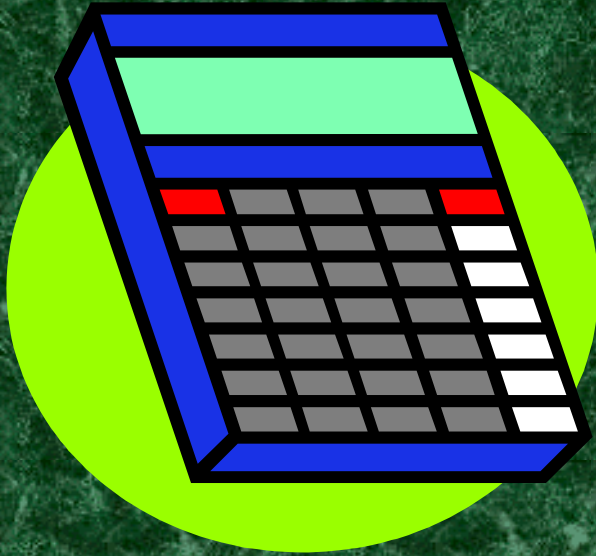This means the calculator has enlarged its object by 3 to give the enlarged size.

3 cm

9 cm

6 cm

x =

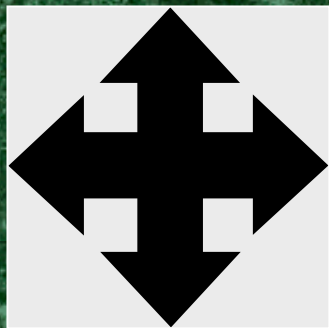If the object increases by 3 then what is the height of the image, x = ?

ANSWER

6 cm x 3 = 18cm

The height of the image of the calculator is 18 cm.

Example 2
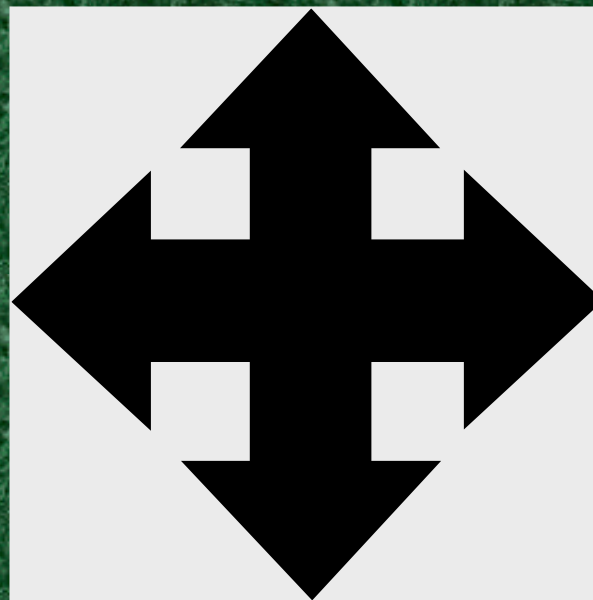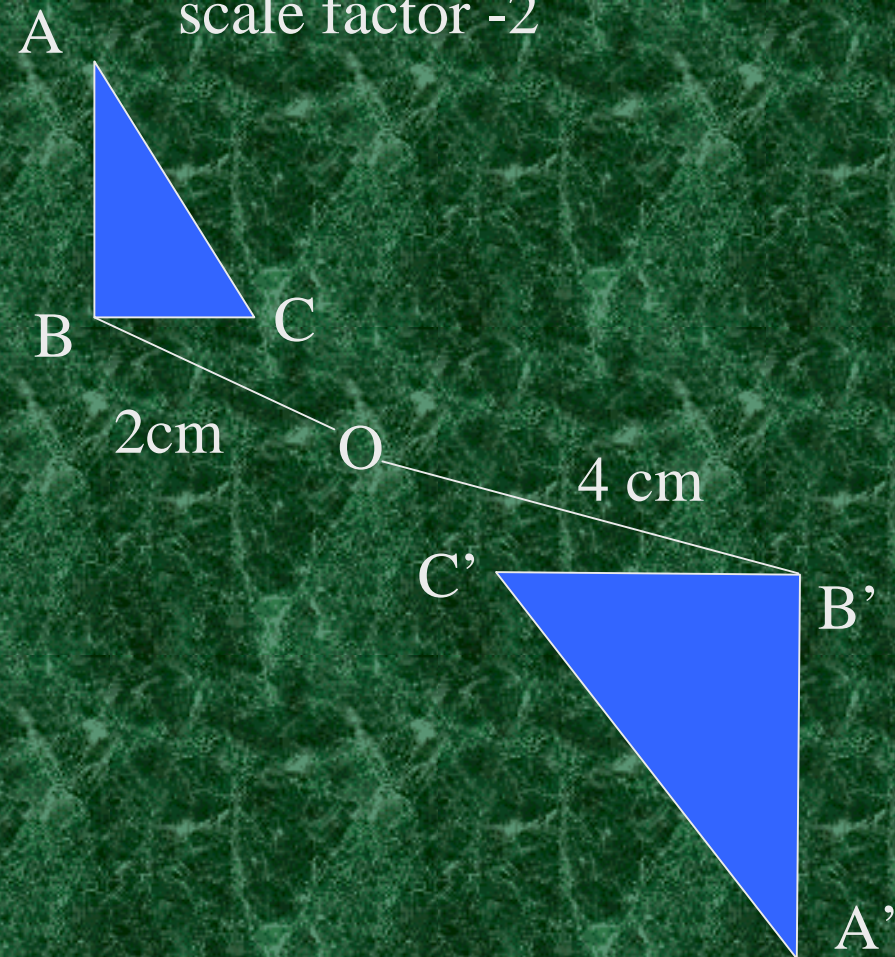
Object

Image

4 cm

20 cm

The scale factor = 20 / 4 = 5

The image enlargement is five times the object (original).

Negative Scale factors
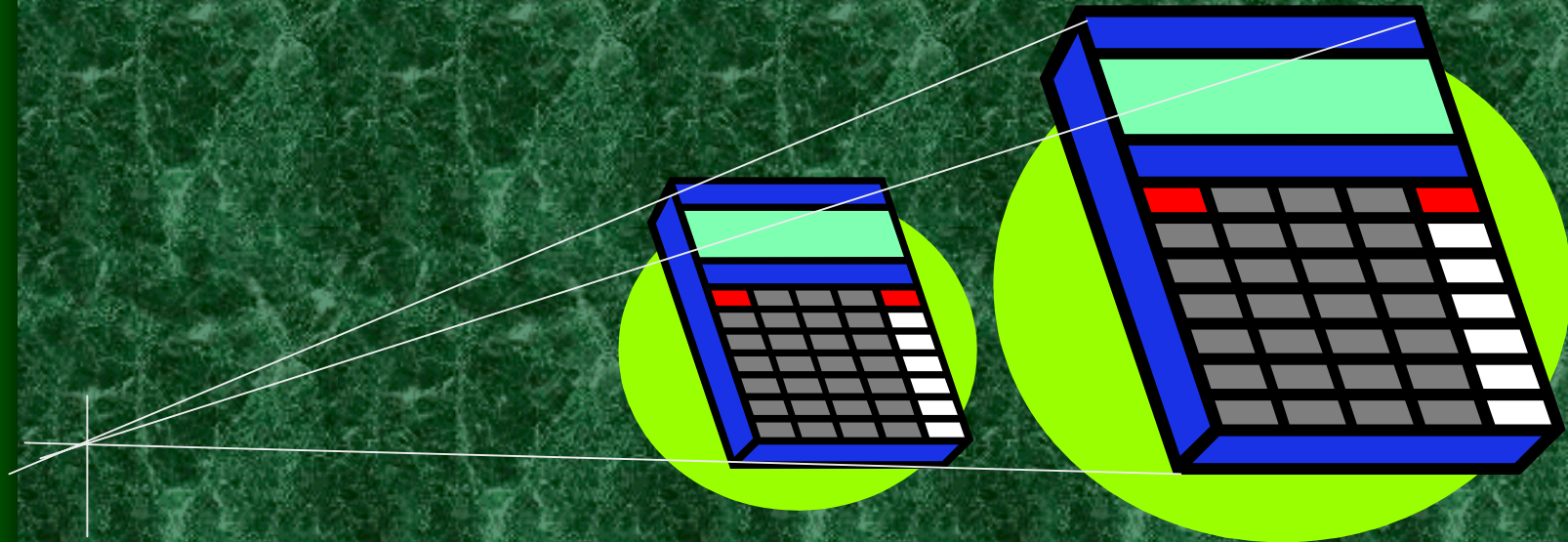
Q: Enlarge ABC, centre O, scale factor -2

- This is when the scale factor is less than 0

- The image is on the opposite side of the centre of enlargement

- The distances from the centre are measured in the opposite direction

A

B   C
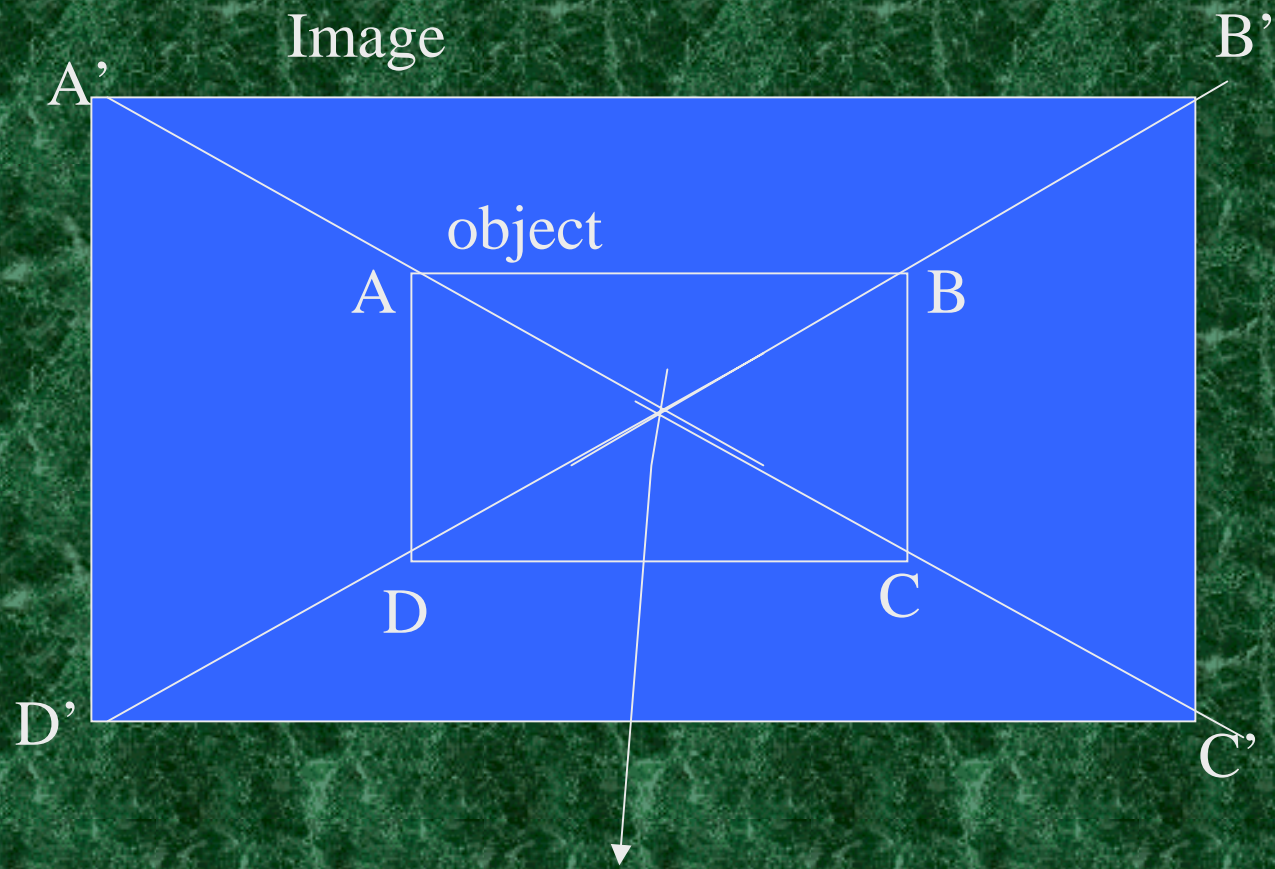
2cm   O

4 cm

C'   B'

A'

Centre of enlargement

- Connects the image and the object (original).

- If you connect both points it will enlarge about a central focus, called the centre of enlargement.

Centre of enlargement

Image

B'

A'

object

A

B

D

C

D'

C'

Centre of enlargement

THE END