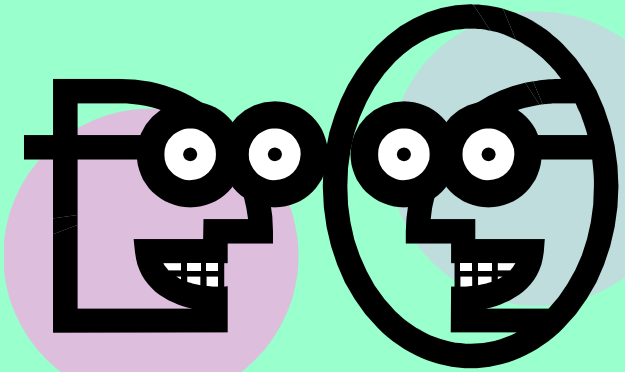
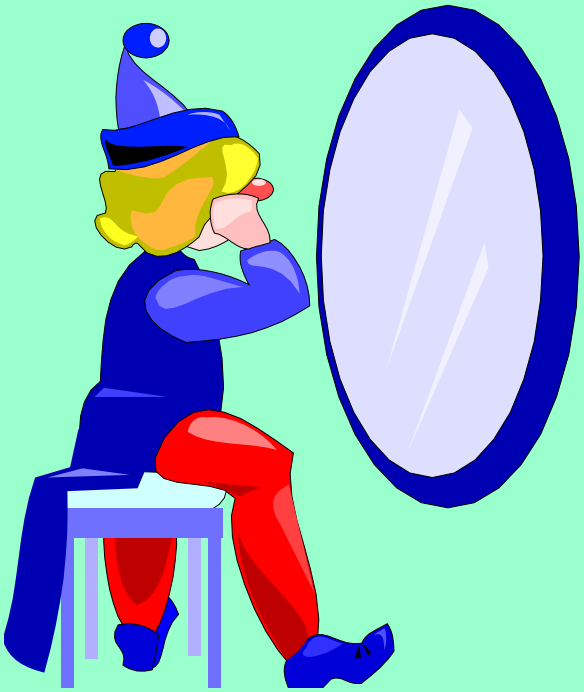


10.

Graph of -f(x)

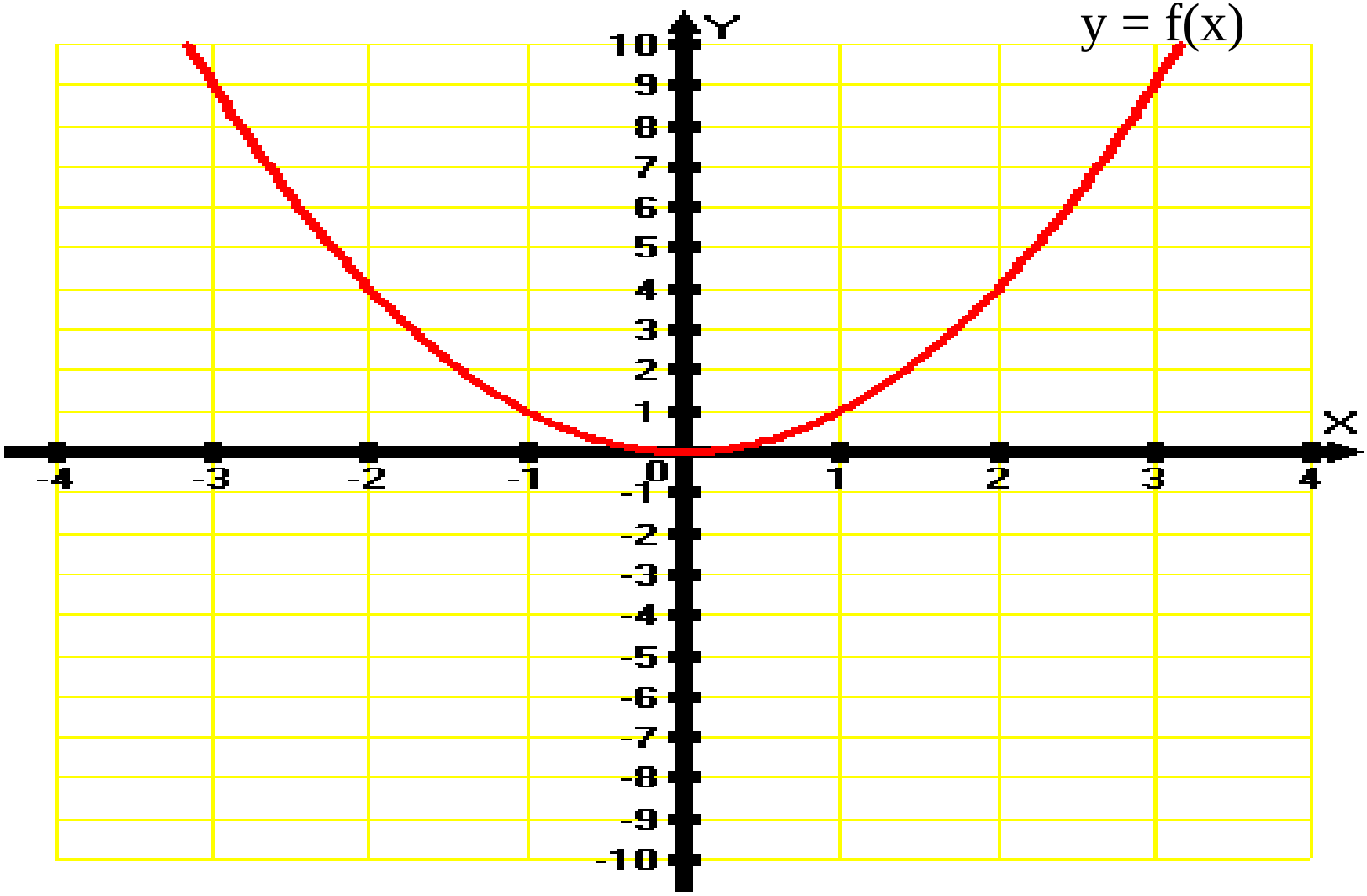


Graph of -f(x)

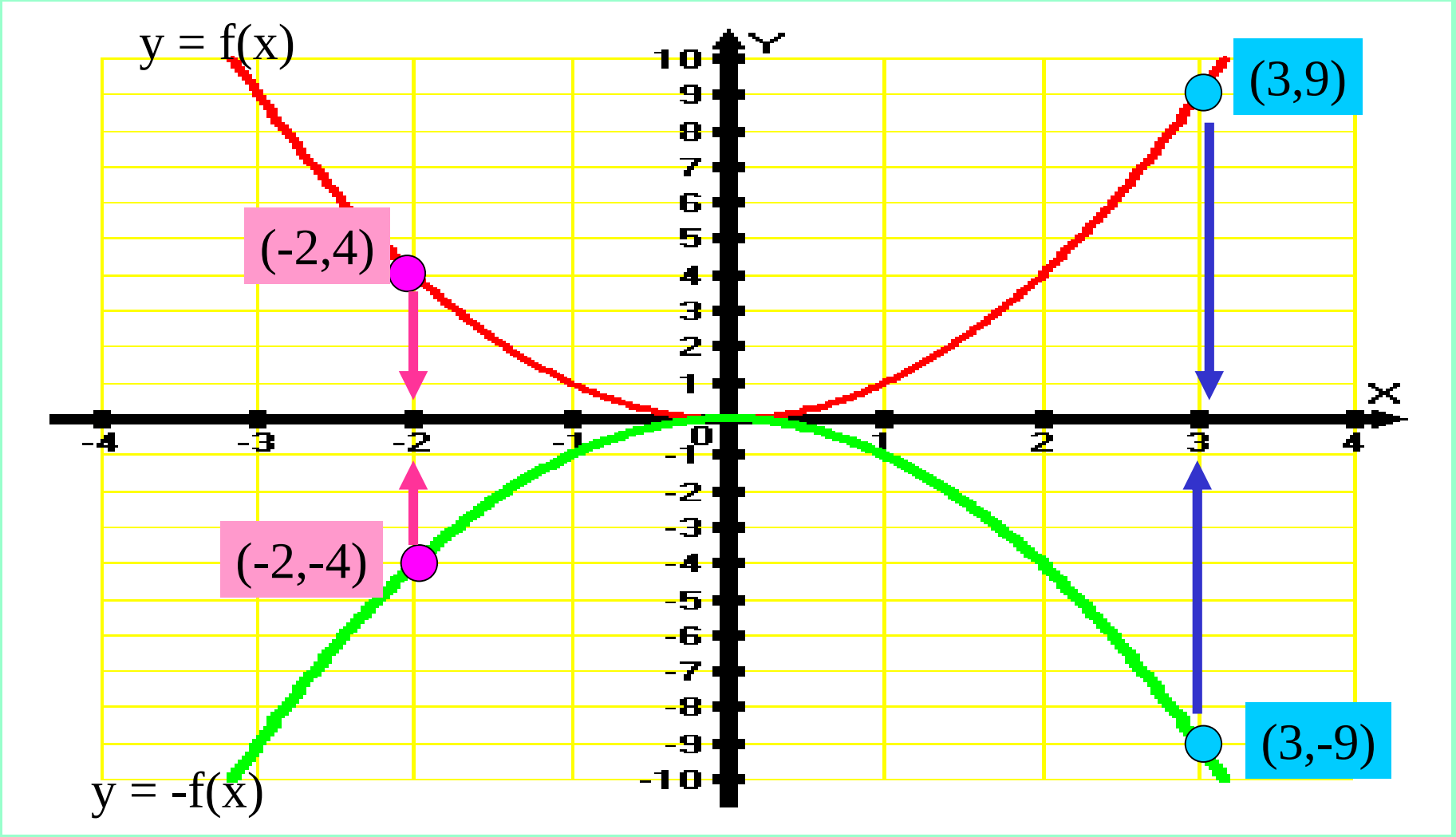
We are now going to look at what happens to f(x) if we change the polarity (change the sign) of the y-values.

That is: $y = f(x) \rightarrow y = -f(x)$

Once again we will start with the function $y = x^2$:



What will happen if we change this to $y = -(x)^2$?



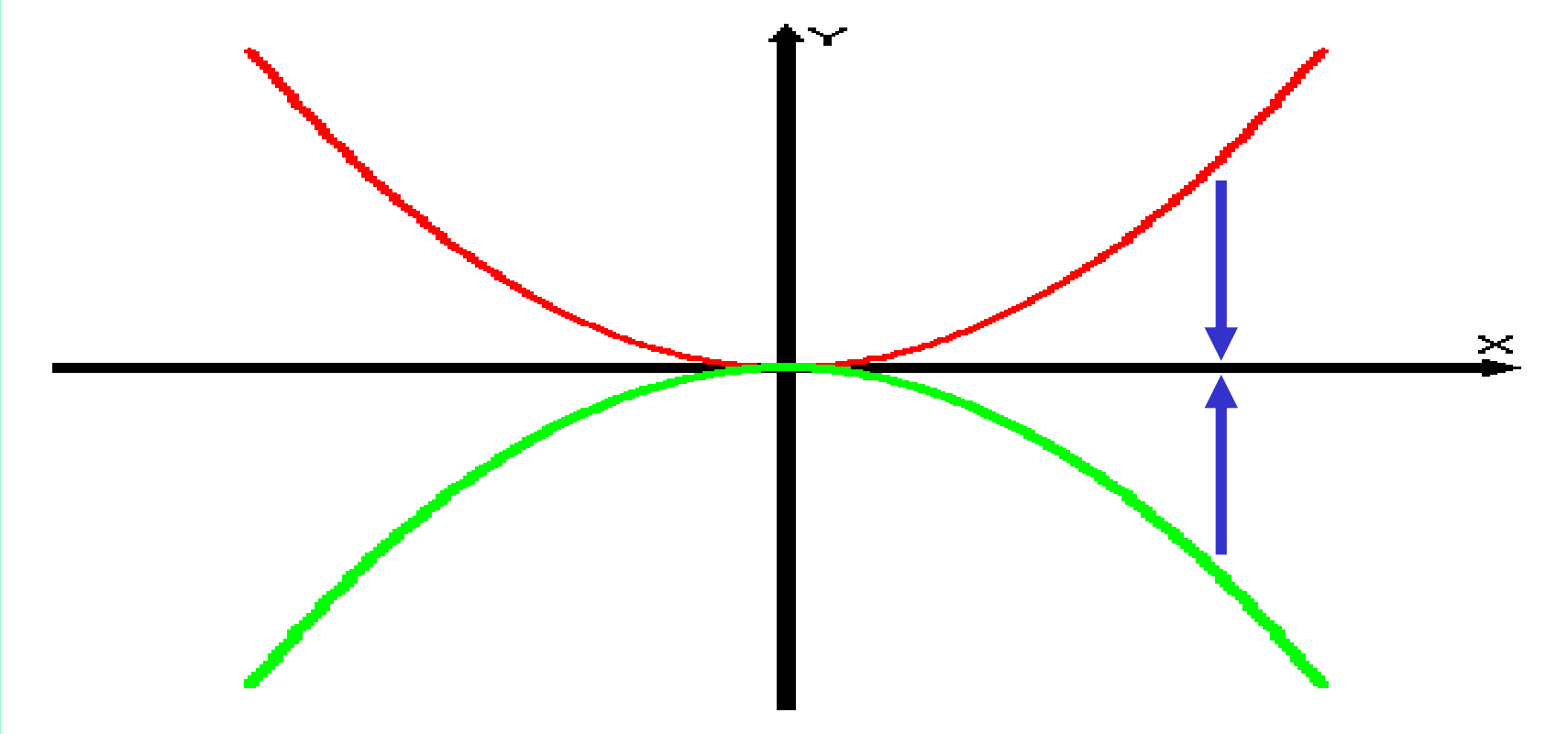
EFFECT : The graph has been turned upside down.
This occurs by reflecting f(x) in the x-axis.
As a result the y-coordinate of each point changes sign.

Graph of y = -f(x)

Copy the following:

To obtain graph of **y = -f(x)** reflect y = f(x) in the x-axis

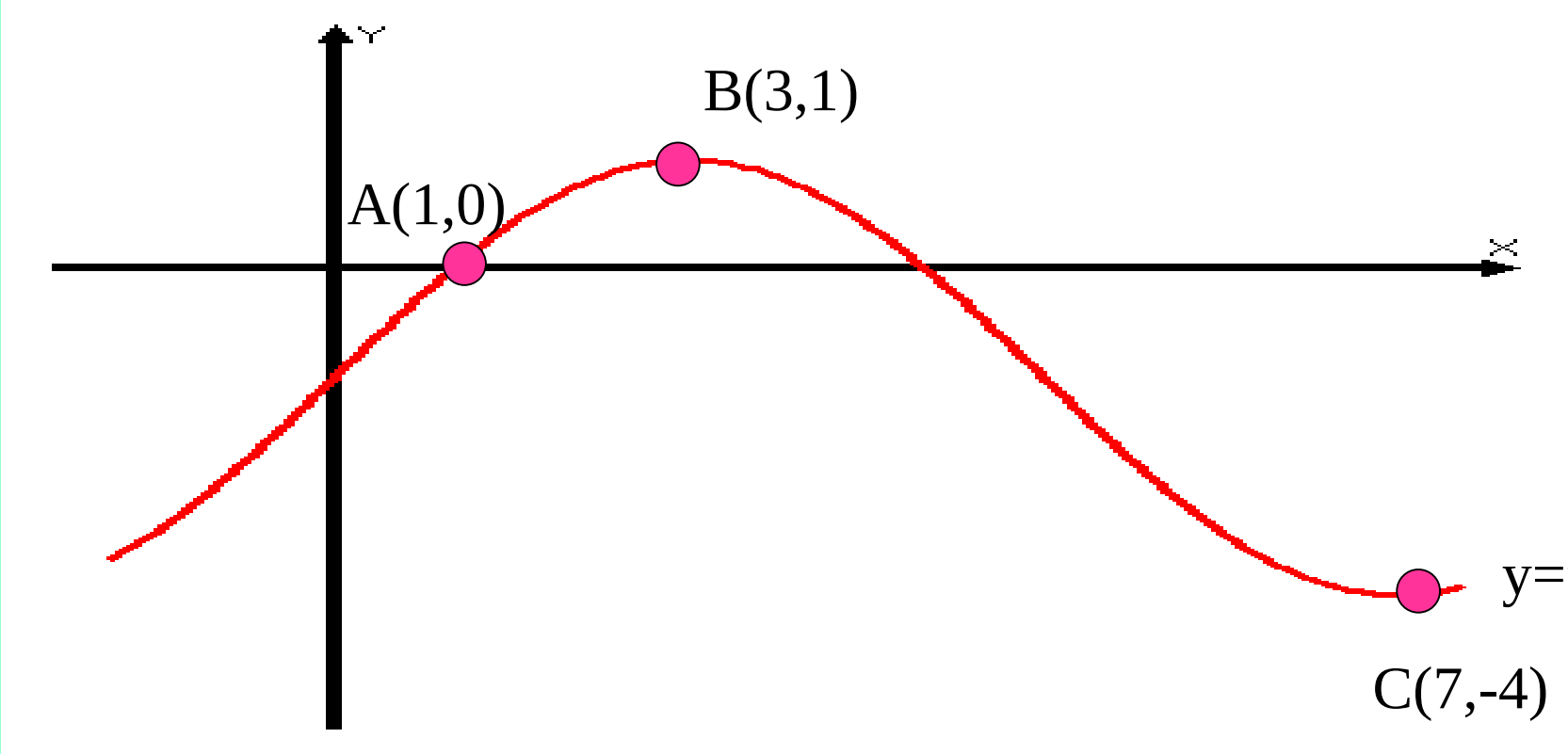
Change the sign of the y-coordinate so $(a,b) \rightarrow (a,-b)$



Example

Shown is the graph of f(x).

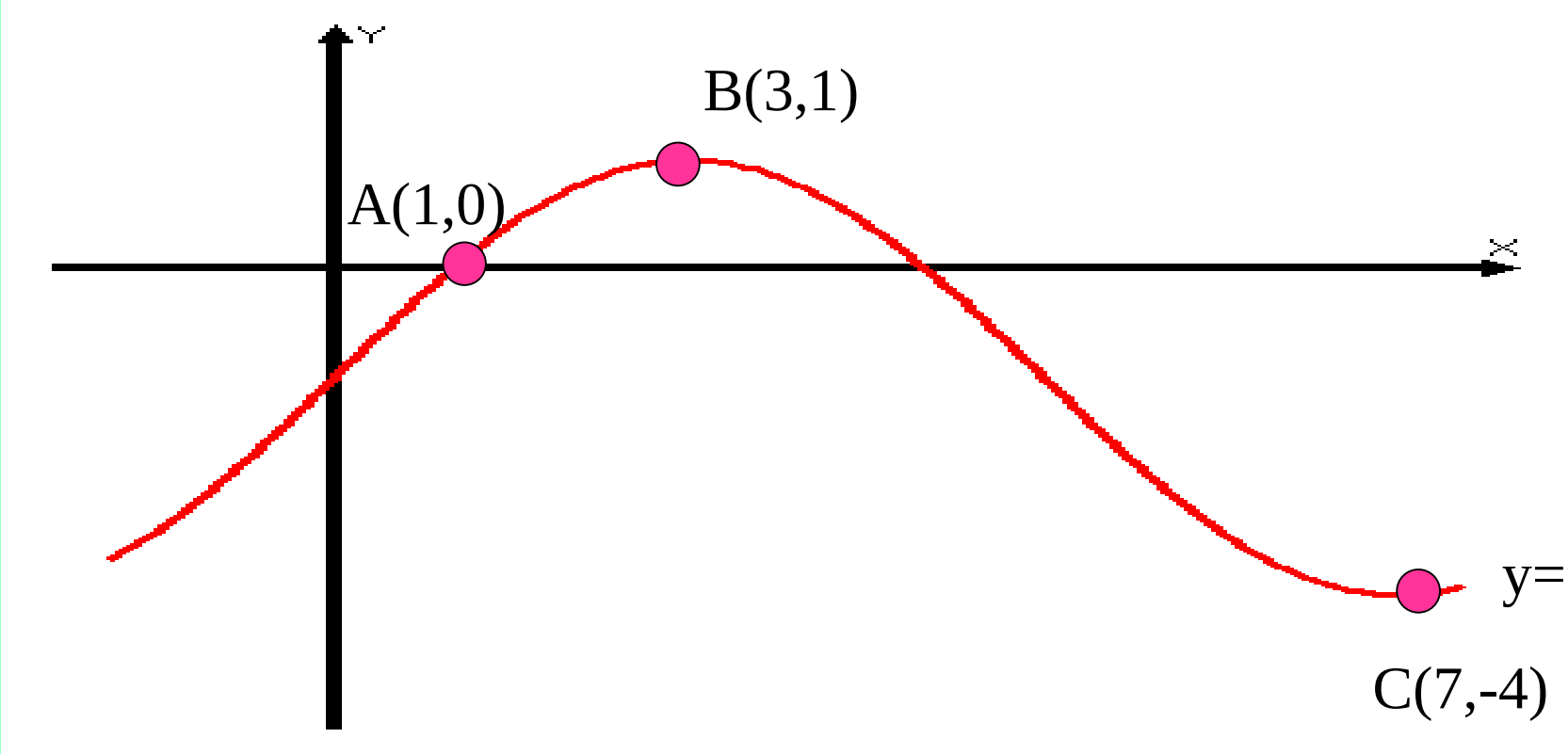
Sketch the graph of -f(x), clearly annotating the images of A, B and C.



Solution:

As required graph is y = -f(x) we **change sign** of each y-coordinate.

$A(1,0) \rightarrow A'(1,0)$ $B(3,1) \rightarrow B'(3,-1)$ $C(7,-4) \rightarrow C'(7,4)$



Solution:

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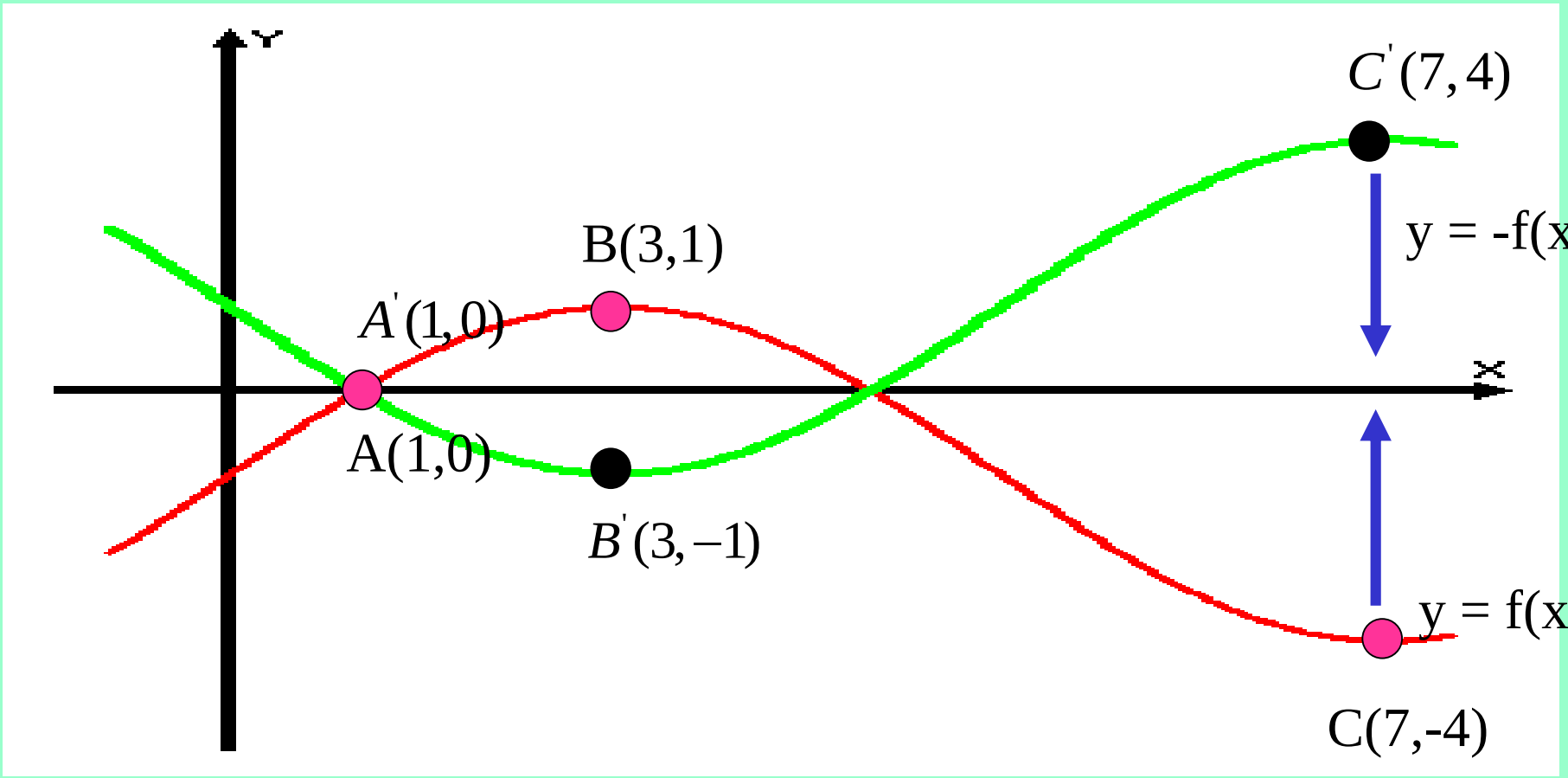

Heinemann, p.40, Ex 3G, Q2, 3, 4