

## Transforming curves

IB SL/HL

1. Write down any transformations you have used in the past in maths lessons (IGCSE or otherwise).
2. Sketch the function,  
 $f(x) = \sin(x)$ , using  $x$  values between  $-360$  and  $360$  degrees.
3. Now sketch,  
 $2f(x)$ , that is  $2\sin(x)$   
Describe fully the transformation.
4. Now sketch,  
 $f(3x)$ , that is  $\sin(3x)$   
Describe fully the transformation.
5. Now sketch,  
 $f(x) + 90$ , that is  $\sin(x) + 90$   
Describe fully the transformation.
6. Now sketch,  
 $f(x+90)$ , that is  $\sin(x+90)$   
Describe fully the transformation.
7. Now sketch,  
 $f(-x)$ , that is  $\sin(-x)$   
Describe fully the transformation.

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8. Now sketch,  
 $-f(x)$ , that is  $-\sin(x)$

Describe fully the transformation.

9. Copy and complete the table below:

$f(x)$	Transformation
$af(x)$	
$f(ax)$	
$f(x) + a$	
$f(x+a)$	
$f(-x)$	
$-f(x)$	
$f^{-1}(x)$	