

Function squares (Main problem)

Graph passes through $(0,0)$
Graph has rotational symmetry about $(0,0)$

Graph passes through (0,0) Graph does not have rotational symmetry about (0,0)

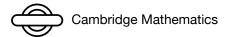
$$f(x) = \cdots$$

$$f(x) = \cdots$$

Graph does not pass through (0,0)Graph has rotational symmetry about (0,0) Graph does not pass through (0,0) Graph does not have rotational symmetry about (0,0)

$$f(x) = \cdots$$

$$f(x) = \cdots$$



Function squares (Main problem)

Function is defined for all real x
Different values of x always give different val-
ues of $f(x)$

Function is defined for all real x Different values of x may give the same value of f(x)

$$f(x) = \cdots$$

$$f(x) = \cdots$$

Function is not defined for some real x Different values of x always give different values of f(x)

Function is not defined for some real x Different values of x may give the same value of f(x)

$$f(x) = \cdots$$

$$f(x) = \cdots$$