

$f(x, y) = 0$ 의 $x = a$ 에 대칭이동
(Reflection about $x = a$ of $f(x, y) = 0$)

Reflection about $x = a$ of $f(x, y) = 0$

▶ Start

▶ End

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▶ Start

▶ End


$$x = a$$

Reflection about $x = a$ of $f(x, y) = 0$

▶ Start

▶ End

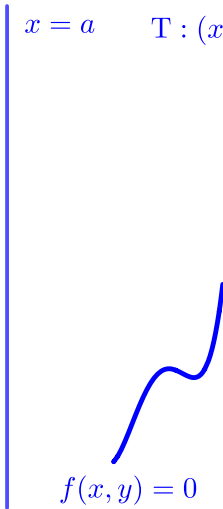
$$x = a \quad T : (x, y) \rightarrow (2a - x, y)$$

Reflection about $x = a$ of $f(x, y) = 0$

▶ Start

▶ End

$$x = a \quad T : (x, y) \rightarrow (2a - x, y)$$

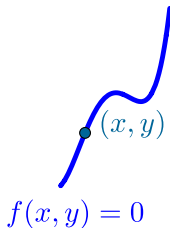

$$f(x, y) = 0$$

Reflection about $x = a$ of $f(x, y) = 0$

▶ Start

▶ End

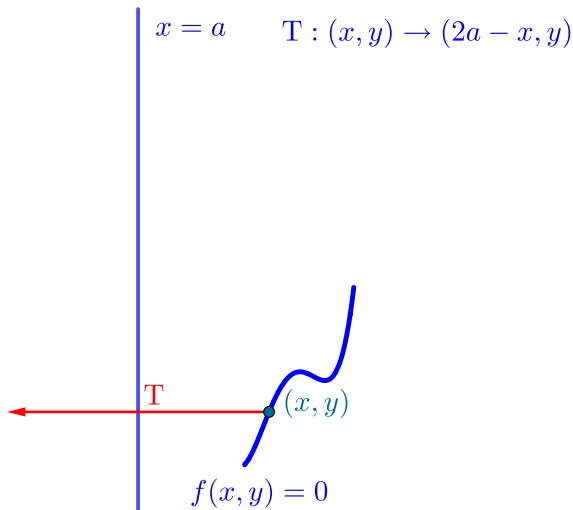
$$x = a \quad T : (x, y) \rightarrow (2a - x, y)$$



Reflection about $x = a$ of $f(x, y) = 0$

▶ Start

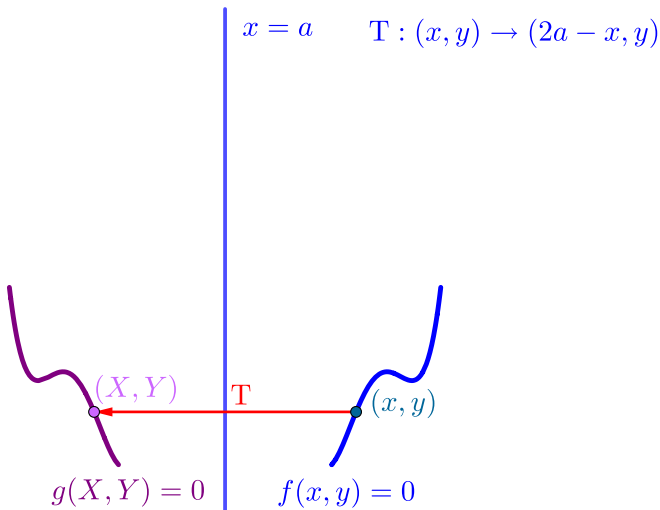
▶ End



Reflection about $x = a$ of $f(x, y) = 0$

▶ Start

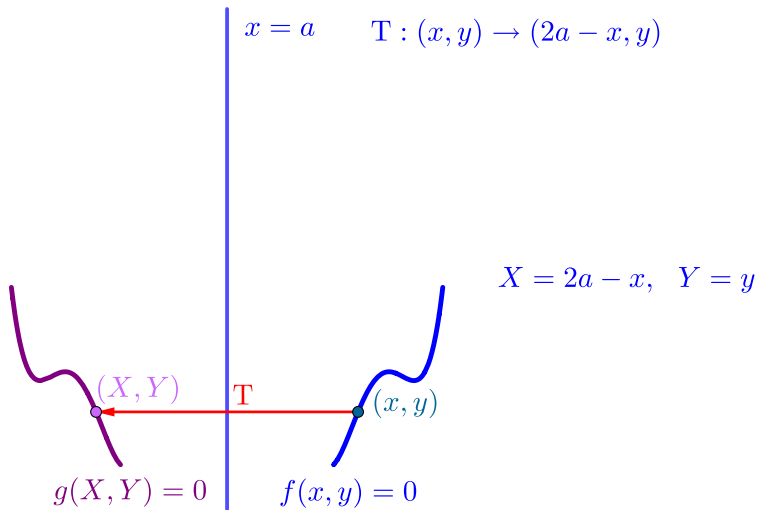
▶ End



Reflection about $x = a$ of $f(x, y) = 0$

▶ Start

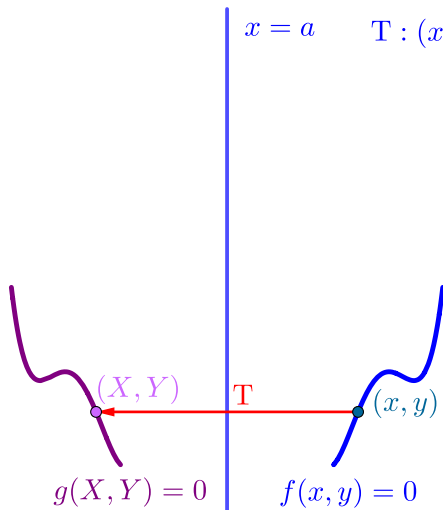
▶ End



Reflection about $x = a$ of $f(x, y) = 0$

▶ Start

▶ End



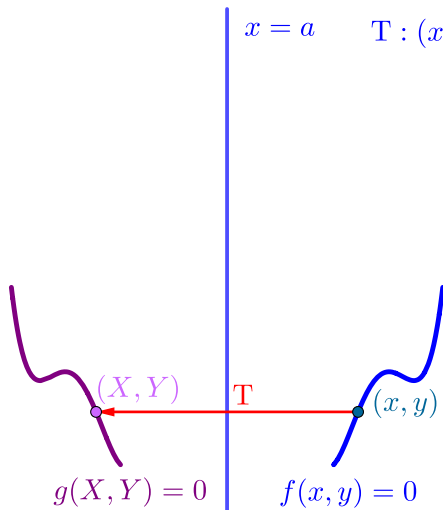
$$x = a \quad T : (x, y) \rightarrow (2a - x, y)$$

$$X = 2a - x, \quad Y = y$$
$$x = 2a - X, \quad y = Y$$

Reflection about $x = a$ of $f(x, y) = 0$

▶ Start

▶ End



$$X = 2a - x, \quad Y = y$$

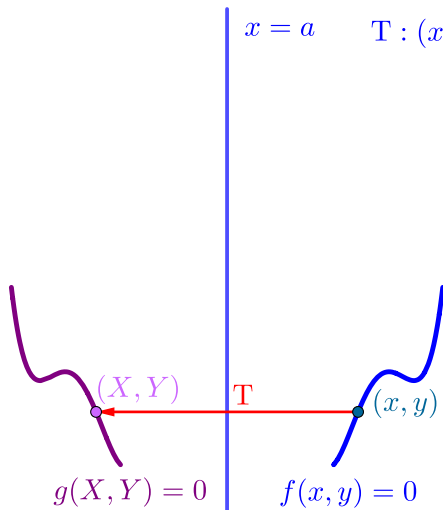
$$x = 2a - X, \quad y = Y$$

$$f(x, y) = f(2a - X, Y)$$

Reflection about $x = a$ of $f(x, y) = 0$

▶ Start

▶ End



$$x = a \quad T : (x, y) \rightarrow (2a - x, y)$$

$$X = 2a - x, \quad Y = y$$

$$x = 2a - X, \quad y = Y$$

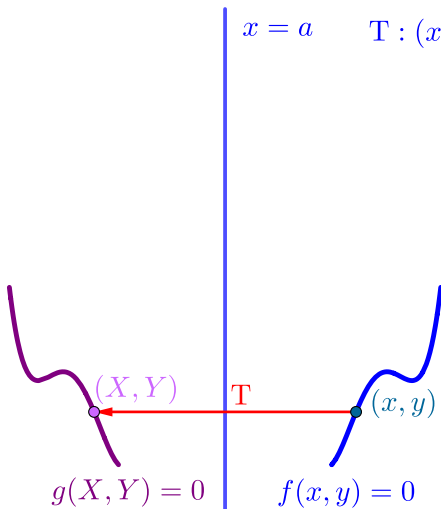
$$f(x, y) = f(2a - X, Y)$$

$$f(2a - X, Y) = 0$$

Reflection about $x = a$ of $f(x, y) = 0$

▶ Start

▶ End



$$x = a \quad T : (x, y) \rightarrow (2a - x, y)$$

$$X = 2a - x, \quad Y = y$$

$$x = 2a - X, \quad y = Y$$

$$f(x, y) = f(2a - X, Y)$$

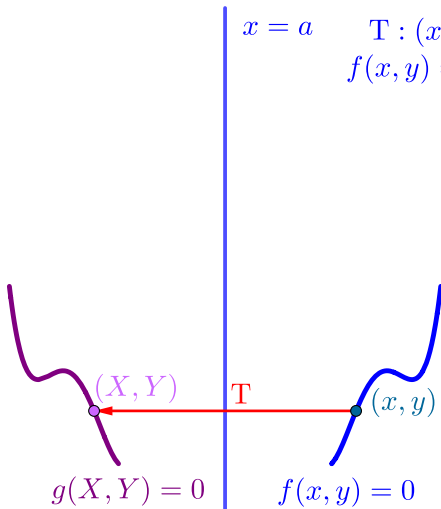
$$f(2a - X, Y) = 0$$

$$\therefore g(X, Y) = f(2a - X, Y)$$

Reflection about $x = a$ of $f(x, y) = 0$

▶ Start

▶ End



$$x = a$$

$$T : (x, y) \rightarrow (2a - x, y)$$

$$f(x, y) = 0 \rightarrow g(x, y) = 0$$

$$X = 2a - x, \quad Y = y$$

$$x = 2a - X, \quad y = Y$$

$$f(x, y) = f(2a - X, Y)$$

$$f(2a - X, Y) = 0$$

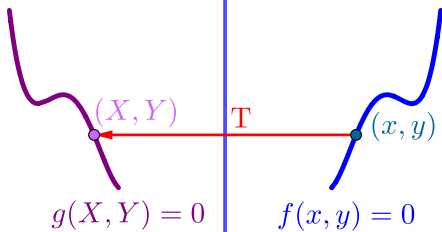
$$\therefore g(X, Y) = f(2a - X, Y)$$

Reflection about $x = a$ of $f(x, y) = 0$

▶ Start

▶ End

$$\begin{aligned}x = a \quad T : (x, y) &\rightarrow (2a - x, y) \\f(x, y) = 0 &\rightarrow g(x, y) = 0 \\ \{(x, y) | f(x, y) = 0\} &\rightarrow \{(x, y) | g(x, y) = 0\}\end{aligned}$$



$$\begin{aligned}X &= 2a - x, \quad Y = y \\x &= 2a - X, \quad y = Y \\f(x, y) &= f(2a - X, Y) \\f(2a - X, Y) &= 0 \\ \therefore g(X, Y) &= f(2a - X, Y)\end{aligned}$$

Reflection about $x = a$ of $f(x, y) = 0$

▶ Start

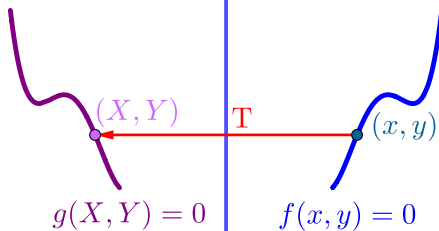
▶ End

$$x = a \quad T : (x, y) \rightarrow (2a - x, y)$$

$$f(x, y) = 0 \rightarrow g(x, y) = 0$$

$$\{(x, y) | f(x, y) = 0\} \rightarrow \{(x, y) | g(x, y) = 0\}$$

$$\{(x, y) | f(x, y) = 0\} \rightarrow \{(x, y) | f(2a - x, y) = 0\}$$



$$X = 2a - x, \quad Y = y$$

$$x = 2a - X, \quad y = Y$$

$$f(x, y) = f(2a - X, Y)$$

$$f(2a - X, Y) = 0$$

$$\therefore g(X, Y) = f(2a - X, Y)$$

Reflection about $x = a$ of $f(x, y) = 0$

▶ Start

▶ End

$$x = a$$

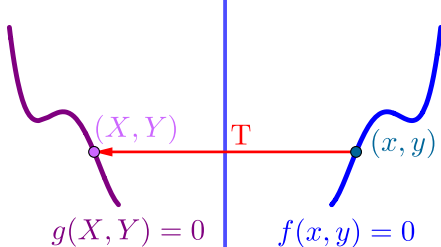
$$T : (x, y) \rightarrow (2a - x, y)$$

$$f(x, y) = 0 \rightarrow g(x, y) = 0$$

$$\{(x, y) \mid f(x, y) = 0\} \rightarrow \{(x, y) \mid g(x, y) = 0\}$$

$$\{(x, y) \mid f(x, y) = 0\} \rightarrow \{(x, y) \mid f(2a - x, y) = 0\}$$

$$T : f(x, y) = 0 \rightarrow f(2a - x, y) = 0$$



$$X = 2a - x, \quad Y = y$$

$$x = 2a - X, \quad y = Y$$

$$f(x, y) = f(2a - X, Y)$$

$$f(2a - X, Y) = 0$$

$$\therefore g(X, Y) = f(2a - X, Y)$$

Github:

<https://min7014.github.io/math20211026001.html>

Click or paste URL into the URL search bar,
and you can see a picture moving.