



Function Transformations (Definition) - Double Transformation (Variables) to

Definition

1 What does this transformation produce in $f(x)$?

$$g(x) = f(-x) - w$$

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|---|--------------------------------------|---|------------------------------------|
| A | Reflect in X-Axis Shift down: w | B | Reflect in Y-Axis Shift up: w |
| C | Reflect in Y-Axis Shift down: w | | |

2 What does this transformation produce in $f(x)$?

$$g(x) = p \cdot f(x + m)$$
$$p < 1$$

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|---|---|---|--|
| A | Vertical compression: p Shift right: m | B | Vertical compression: p Shift left: m |
| C | Vertical stretch: p Shift left: m | | |

3 What does this transformation produce in $f(x)$?

$$g(x) = f(-x + n)$$

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|---|--------------------------------------|---|---------------------------------------|
| A | Reflect in Y-Axis Shift left: n | B | Reflect in Y-Axis Shift right: n |
| C | Reflect in X-Axis Shift left: n | | |

4 What does this transformation produce in $f(x)$?

$$g(x) = f(-x + q)$$

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|---|---------------------------------------|---|--------------------------------------|
| A | Reflect in Y-Axis Shift right: q | B | Reflect in Y-Axis Shift left: q |
| C | Reflect in X-Axis Shift left: q | | |

5 What does this transformation produce in $f(x)$?

$$g(x) = r \cdot f(x) - w$$
$$r > 1$$

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|---|--|---|--|
| A | Vertical stretch: r Shift up: w | B | Vertical stretch: r Shift down: w |
| C | Vertical compression: r Shift down: w | | |

6 What does this transformation produce in $f(x)$?

$$g(x) = w \cdot f(t \cdot x)$$
$$w < 1$$
$$t < 1$$

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|---|--|---|--|
| A | Vertical stretch: w Horizontal stretch: t | B | Vertical compression: w Horizontal stretch: t |
| C | Vertical stretch: t Horizontal compression: w | | |

7 What does this transformation produce in $f(x)$?

$$g(x) = -f(x + m)$$

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|---|---------------------------------------|---|---------------------------------------|
| A | Reflect in Y-Axis Shift right: m | B | Reflect in X-Axis Shift right: m |
| C | Reflect in X-Axis Shift left: m | | |

8 What does this transformation produce in $f(x)$?

$$g(x) = r \cdot f(x + m)$$
$$r < 1$$

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|---|--|---|--|
| A | Vertical compression: r Shift left: m | B | Vertical stretch: r Shift left: m |
| C | Horizontal compression: r Shift left: m | | |