

Given $f(x) = y^{x^2}$ find $f'(x)$ where the function is....

(1) Transformed f into direct

$$f(x) = y^{x^2} = y^x$$

(2) reflected over the x -axis

$$f(x) = - (y^x)$$

$$f(x) = - y^x$$

(3) vertically stretched by 2

$$f(x) = 2 (y^x)$$

(4) horizontally compressed by 2

$$f(x) = y^{\left(\frac{x}{2}\right)^2}$$

(5) transformed f into x to the y -axis

$$f(x) = y^{x^2} = x^y$$

(6) reflected over the y -axis

$$f(x) = y^{(-x)^2}$$

(7) vertically compressed by $\frac{1}{2}$

$$f(x) = \frac{1}{2} (y^x)$$

(8) horizontally compressed by $\frac{1}{2}$

$$f(x) = y^{\left(\frac{x}{2}\right)^2}$$

where $f(x) = \log_e x$ find $f'(x)$ where the function is....

(1) Transformed f into direct and compressed

$$f(x) = \log_e (x^2 - 2) = \frac{1}{2}$$

(2) reflected over the x -axis

$$f(x) = - \log_e x^2$$

(3) vertically stretched by 2

$$f(x) = 2 \log_e x^2$$

(4) horizontally compressed by 2

$$f(x) = \log_e (2^x)$$

(5) horizontally compressed by $\frac{1}{2}$

$$f(x) = \log_e \left(\frac{x}{2}\right)$$

(6) Transformed f into x to the y -axis and f stretched

$$f(x) = 2 \log_e x^2 (x+1) = 5$$

(7) vertically stretched by 2

$$f(x) = 2 \log_e x^2 (-x)$$

(8) vertically compressed by $\frac{1}{2}$

$$f(x) = \frac{1}{2} \log_e x^2$$

(9) horizontally compressed by $\frac{1}{2}$

$$f(x) = \log_e \left(\frac{x}{2}\right)$$

(10) transformed f into x to the y -axis and f stretched

$$f(x) = 2 \log_e (x^2 - 2) = \frac{1}{2}$$