

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

(1) Transformed f into direct

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

(2) reflected over the x -axis

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

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

(3) vertically stretched by 2

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

(4) horizontally compressed by 2

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

(5) transformed f into y to the x^2 axis

$$f(x) = y^{(x^2)^2} = y^{x^4}$$

(6) reflected over the y -axis

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

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

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

(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 transformed

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

(2) reflected over the x -axis

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

(3) vertically stretched by 2

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

(4) horizontally compressed by 2

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

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

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

(6) transformed f into y to the x^2 axis

$$f(x) = \log_e (x^2 - 2) = 5$$

(7) vertically stretched by 2

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

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

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

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

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

(10) transformed f into y to the x^2 axis

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