

## Extra practice to Review for Chapter 1 QUIZ

1. From the equation of  $f(x)$ , determine in each case the equation of the transformed function obtained by translating it 1 unit to the right and 3 units down.

a)  $y = f(x)$

$$y = f(x-1) - 3$$

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

$$y = (x-1)^2 - 3$$

$$y = x^2 - 2x - 2$$

c)  $f(x) = \sqrt{x}$

$$y = \sqrt{x-1} - 3$$

d)  $f(x) = -2x^2 + 3x - 5$

$$y = -2(x-1)^2 + 3(x-1) - 5 - 3$$

$$y = -2(x^2 - 2x + 1) + 3x - 3 - 5 - 3$$

$$y = -2x^2 + 7x - 13$$

e)  $f(x) = \frac{1}{x}$

$$y = \frac{1}{x-1} - 3$$

2. From the equation of  $f(x)$ , determine in each case the equation of the transformed function obtained by reflecting it around the  $x$ -axis and stretching it horizontally by a factor  $\frac{1}{3}$ .

a)  $y = f(x)$

$$y = -f(3x)$$

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

$$y = -(3x)^2$$

$$y = -9x^2$$

c)  $f(x) = \sqrt{x}$

$$y = -\sqrt{3x}$$

d)  $f(x) = -2x^2 + 3x - 5$

$$y = -(-2(3x)^2 + 3(3x) - 5)$$

$$y = 18x^2 - 9x + 5$$

e)  $f(x) = \frac{1}{x}$

$$y = -\frac{1}{3x}$$

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3. From the equation of  $f(x)$ , determine in each case the equation of the transformed function obtained by reflecting it around the  $x$ -axis and stretching it vertically by a factor  $\frac{1}{3}$ .

a)  $y = f(x)$

$$y = -\frac{1}{3}f(x)$$

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

$$y = -\frac{1}{3}x^2$$

c)  $f(x) = \sqrt{x}$

$$y = -\frac{1}{3}\sqrt{x}$$

d)  $f(x) = -2x^2 + 3x - 5$

$$y = -\frac{1}{3}(-2x^2 + 3x - 5)$$

$$y = \frac{2}{3}x^2 - x + \frac{5}{3}$$

e)  $f(x) = \frac{1}{x}$

$$y = -\frac{1}{3x}$$