MATH 30 - Precalculus. Homework 1. Due We. 02/07/2024. Professor Luis Fernández

If you hand it in, please use this sheet for your graphs or short answers; **STAPLE** any additional sheets.

1. For the function $f(x) = 3x - 5$, find (and simplify when possible)

    a) $f(3) =$ **b)** $f(-4) =$ **c)** $f(t) =$

    d) $f(x+1) =$ **e)** $f(-x) =$ **f)** $f(x^2) =$

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2. For the function $f(x) = \dfrac{3x^2 - 1}{x^2}$, find (and simplify when possible)

    a) $f(2) =$ **b)** $f(-1) =$ **c)** $f(r) =$
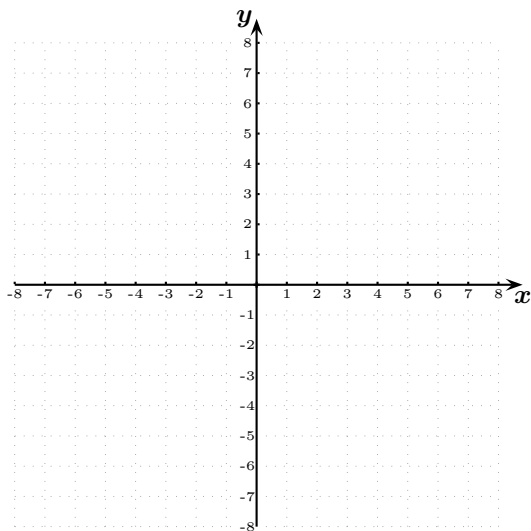
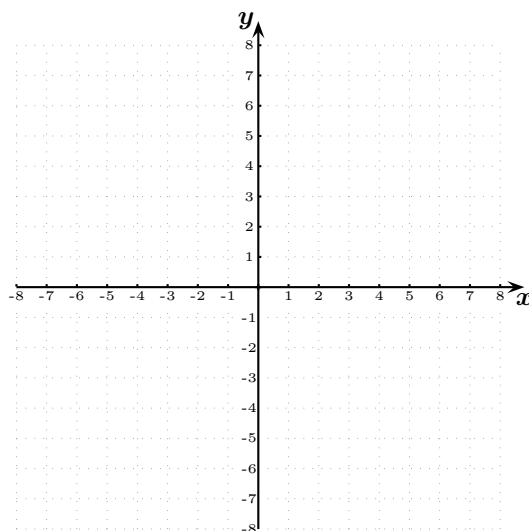   **d)** $f(x-1) =$ **e)** $f(-x) =$ **f)** $f(x^3) =$

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3. Make a table of values (take, for example, the integers between -6 and 6; you may want to use a calculator) and graph the following functions in the axes provided.

    a) $f(x) = \sqrt{x+3}$ **b)** $g(x) = |x|$

                                                 (remember that $|x|$ means 'absolute value of x')

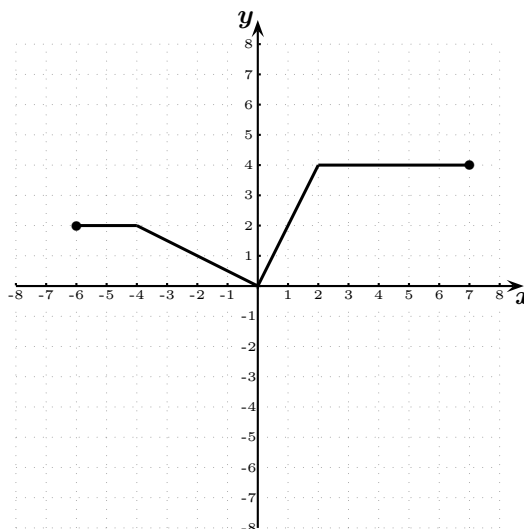**4.** Use the given graph of the function g to answer the questions below.

    a) Find $g(-2) =$ **b)** Find $g(0) =$

    c) Find $g(1) =$ **d)** Find $g(-3) =$

    e) Find $g(4) =$ **f)** Find $g(7) =$
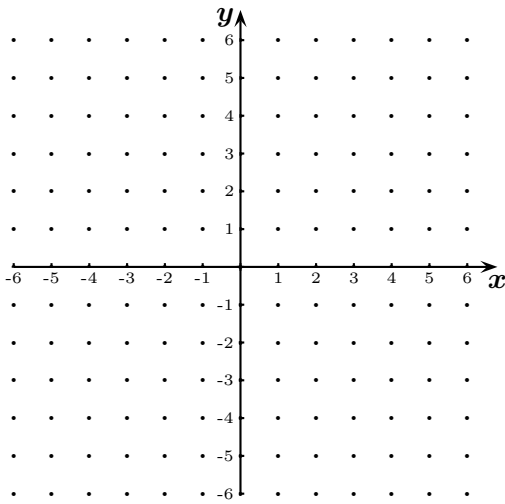
g) Find the domain of g and write it in interval notation.
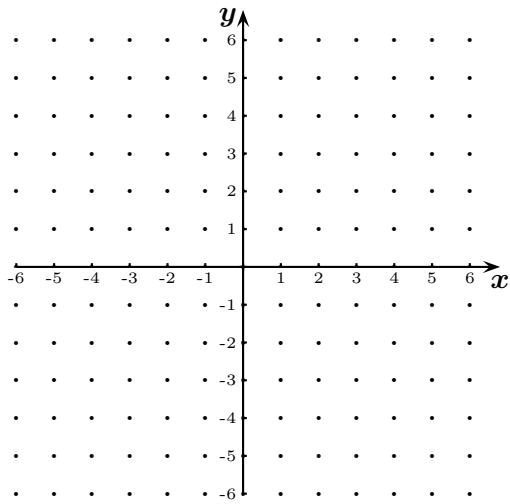
h) Find the range of g and write it in interval notation.
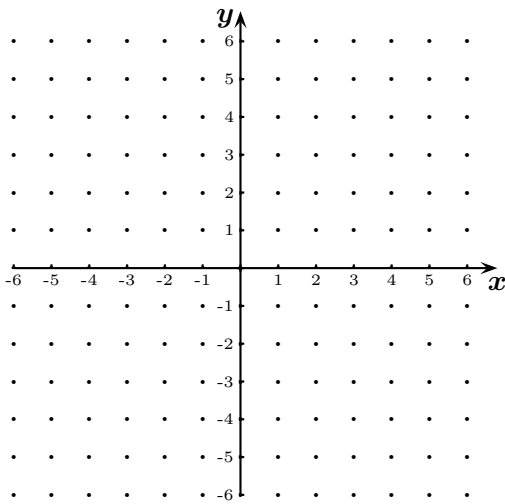
5. Graph the following lines.

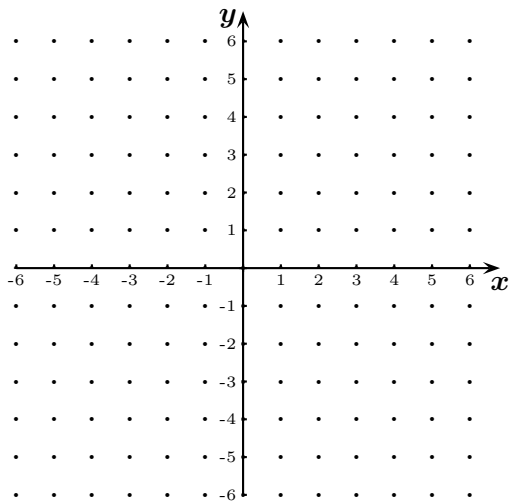Graph $y = x - 3$ indicating at least two points.

Graph $y = -2x + 3$ indicating at least two points.

Graph $3x - 2y = 6$ indicating at least two points.

Graph $x = 3$ indicating at least two points.

6. Find the equation of the line passing through the point $(1, 3)$ that is parallel to the line with equation $3x + 2y = 5$.

7. Find the equation of the line passing through the point $(-1, 2)$ that is perpendicular to the line with equation $3x + 2y = 5$.