

Name: \_\_\_\_\_ Subject: Math 2412 Date: 9/4/25

### 1<sup>st</sup> Session Worksheet

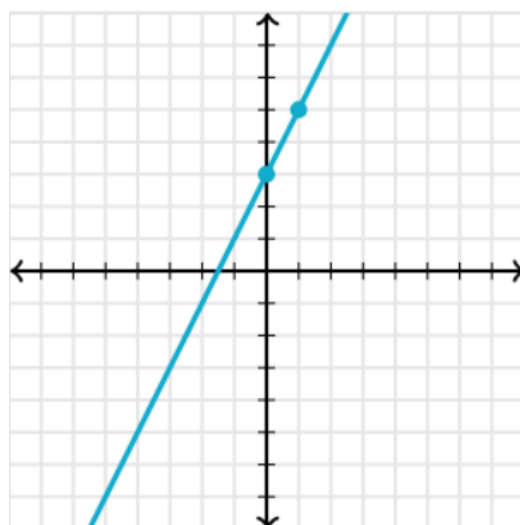
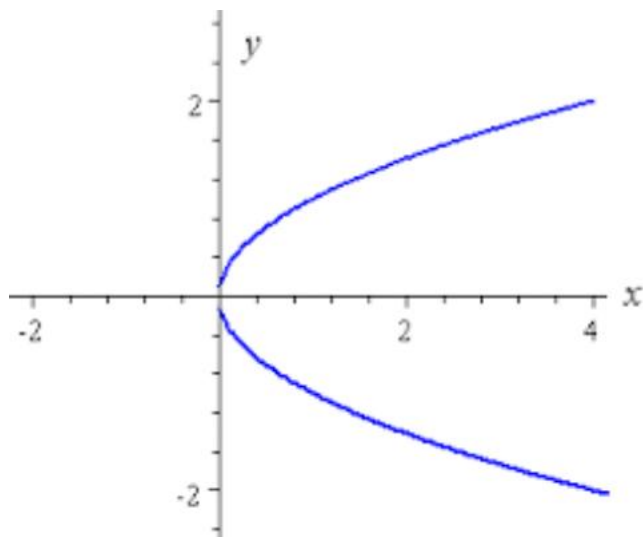
1. Is this table a function? Why or why not?

x	5	6	7	5
f(x)	10	7	9	3

2. Is this table a function? Why or why not?

x	8	9	10	11
f(x)	2	4	9	8

Vertical line test examples



## Circles

Put the circle equations into standard form

1.  $x^2 + y^2 + 2x + 6y - 15 = 0$

2.  $x^2 + y^2 + 4x - 4y - 17 = 0$

3. The point (1, -2) lies on a circle whose center is at (-3, -5). Write the standard form for the equation of the circle.

Factor the following rational functions. Find any holes, if they exist, vertical asymptote(s) and x-intercept(s).

$$\frac{x^2 + 8x + 12}{x + 2}$$

$$\frac{4x - 8}{x^2 + x - 6}$$

Do the rational functions have horizontal asymptotes? If so, what are they?

$$\frac{3x^2 - 2x - 8}{x^2 + x - 12}$$

$$\frac{4x - 8}{x^2 + x - 6}$$

$$\frac{x^3 - 8}{x - 4}$$

$$\frac{x^2 + 8x + 12}{x + 2}$$