Different Discontinuities
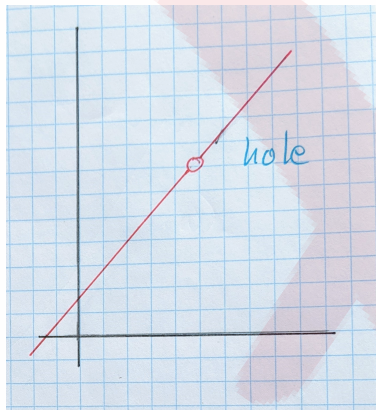
Different types of discontinuity

A *discontinuity* of a function is a point at which the function is **not** continuous. Below are the different types of discontinutities, the first being a continuous function.
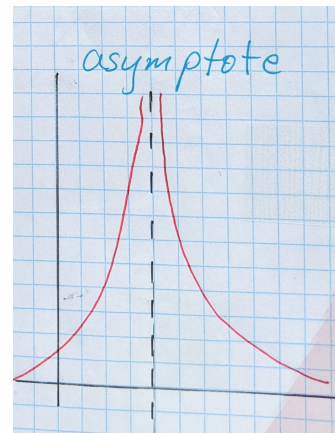
1. **Continuous**
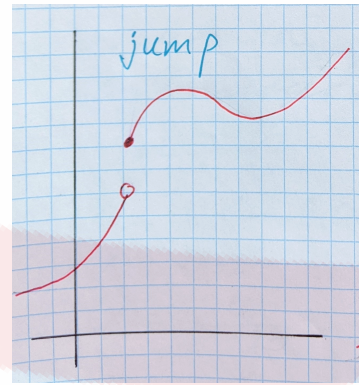
2. **Hole**

3. **Jump**

4. **Asymptote**

Exercises

1. What are the different types of discontinuties?

2. Find the values of x at which the functions are discontinuous.

a)
$$f(x) = \frac{9 - x^2}{x - 3}$$

b)
$$f(x) = \frac{7x - 4}{x}$$

c)
$$f(x)\frac{x^2 + 1}{x^3}$$

d)
$$f(x)\frac{13x}{x^2 + x - 6}$$

e)
$$f(x) = \frac{x - 4}{x^2 - 9}$$

3. Find all values of x for which the functions are continuous.

a)
$$f(x) = \frac{x^2 + 16}{x^2 - 5x}$$

b)
$$f(x) = \pi x^2 - 4.2x + 7$$

c)
$$f(x) = \sqrt{x + 2}$$

d)
$$f(x) = \frac{16}{x^2 + 25}$$

e)
$$f(x) = 10^x$$