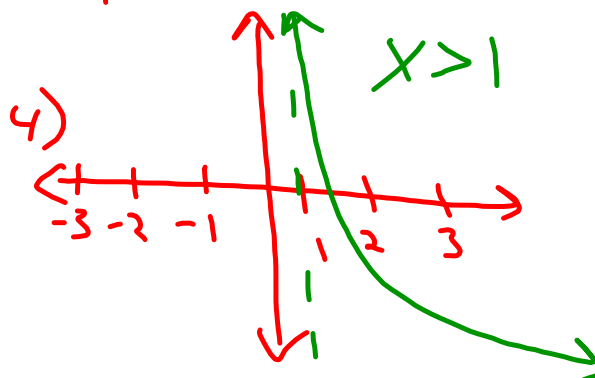
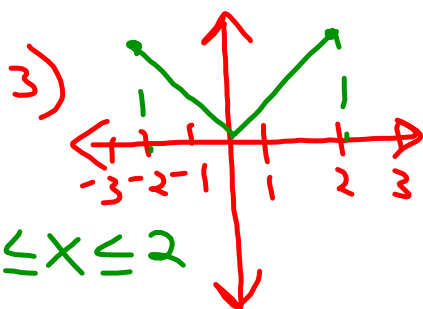


Warm-up

Find the domain of the function:

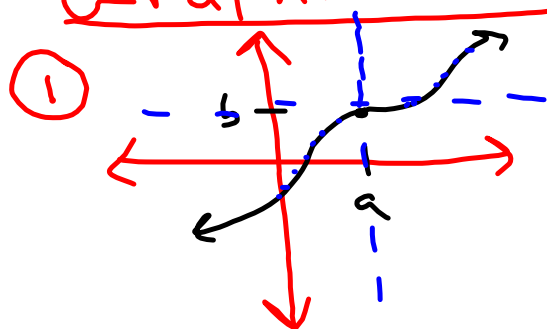
1) $f(x) = \frac{2x}{x-5}$ $x \neq 5$

2) $g(x) = \sqrt{x^2-9}$ $x \geq 3$ or $x \leq -3$



Limits (1.2)

Graphically
Numerically
Analytically (Algebra)
Graphical limits



As we get closer and closer to a certain x value, is there a y -value we get closer to?

$$\lim_{x \rightarrow a^-} f(x) = b$$

(left)

$$\lim_{x \rightarrow a^+} f(x) = b$$

(right)

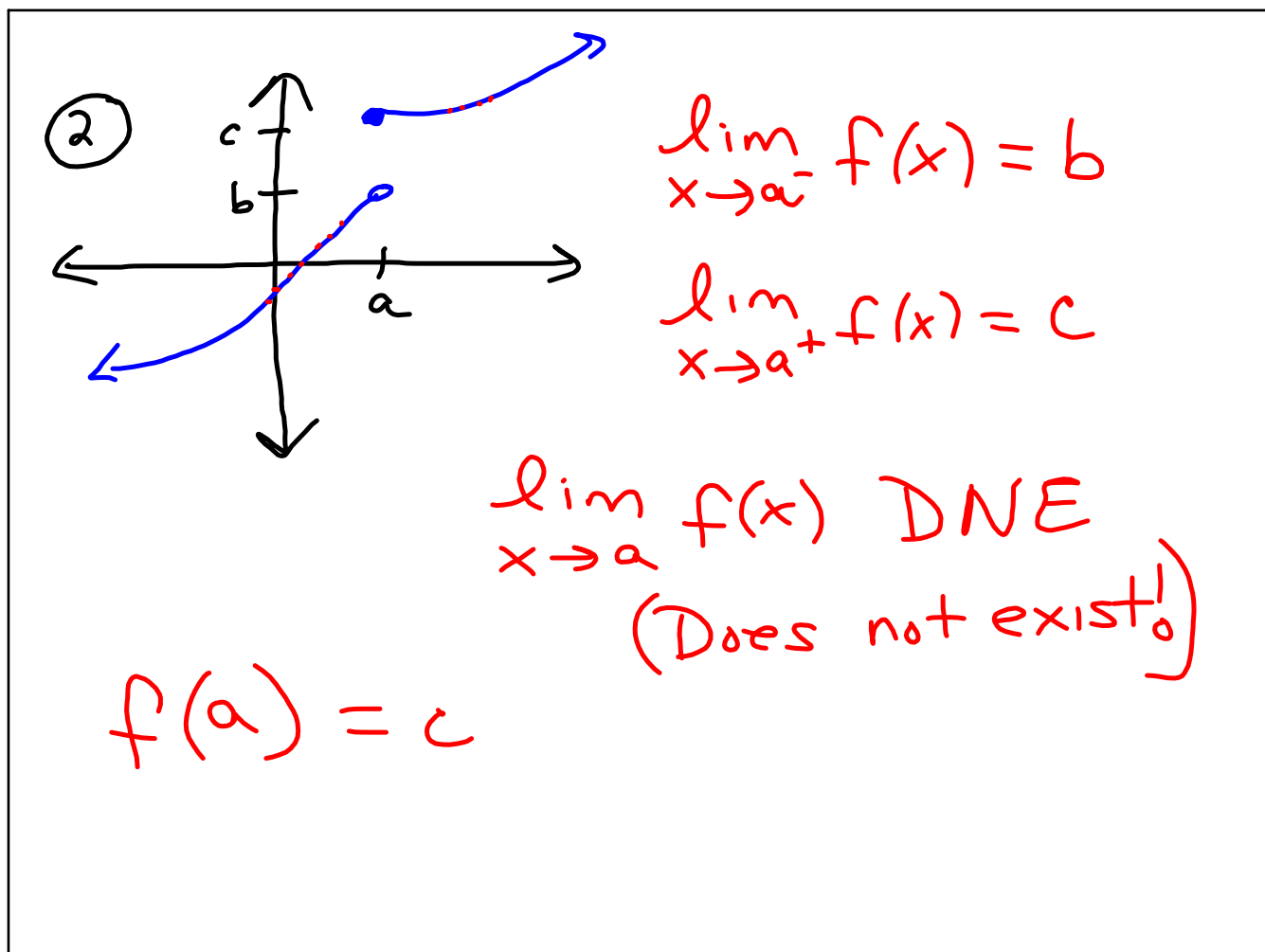
one-sided limits

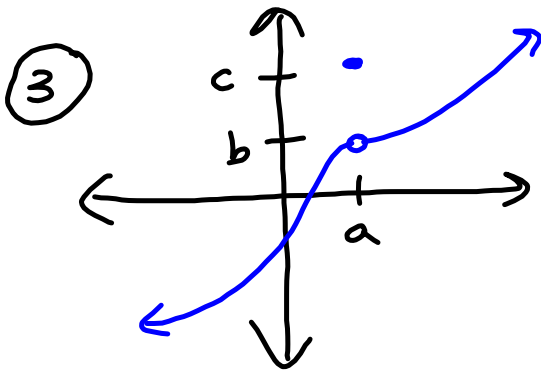
one-sided limits
are equal (fingers
come together)

THEN

$$\lim_{x \rightarrow a} f(x) = b$$

two-sided limit





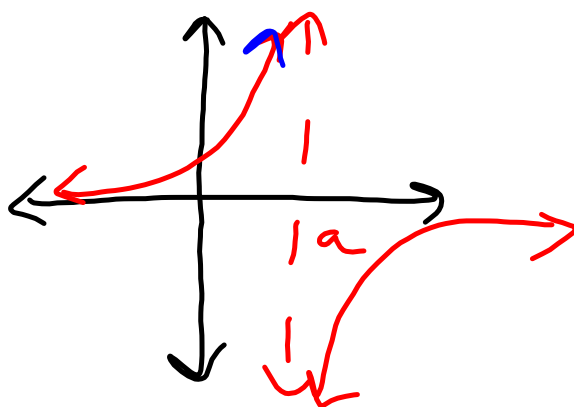
$$a) \lim_{x \rightarrow a^-} f(x) = b$$

$$d) f(a) = c$$

$$b) \lim_{x \rightarrow a^+} f(x) = b$$

$$c) \lim_{x \rightarrow a} f(x) = b$$

(4)



$$a) \lim_{x \rightarrow a^-} f(x) = \infty \quad (\text{limit does not exist})$$

$$b) \lim_{x \rightarrow a^+} f(x) = -\infty$$

$$c) \lim_{x \rightarrow a} f(x) \text{ DNE}$$