February 10

(Move one seat to the left and one seat up - if you were in the first row, move to the third row.)

What is a limit and how do you find it?

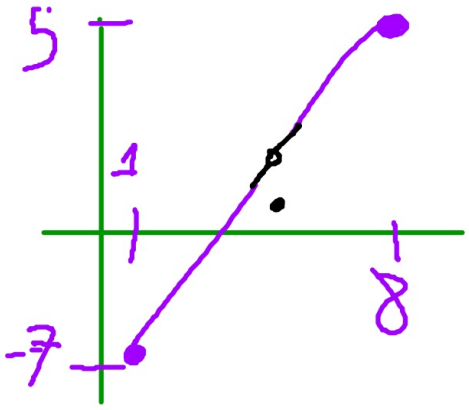
February 10

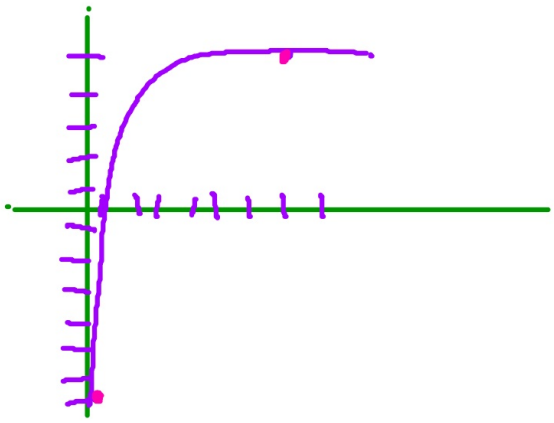
Students will verbally explain how to apply the Intermediate Value Theorem to Justify solutions

(using the words: value, continuous, exist...)

Let the two points (1, -7) and (8,5) be two points on the graph of a given function F.
Let the domain of F include all numbers $1 \leq x \leq 8$.

Sketch what the graph of f might look like that meets the two conditions listed above.

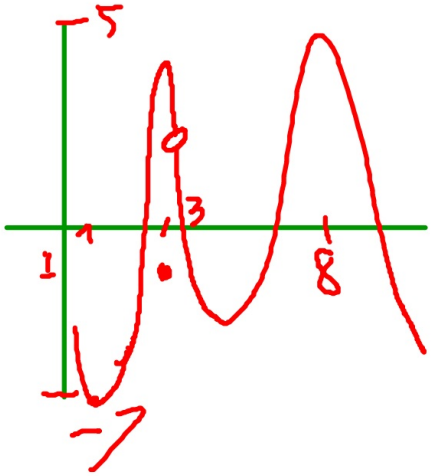


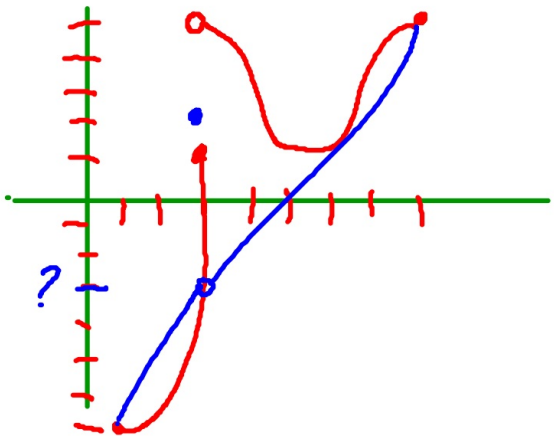


Let the two points (1, -7) and (8,5) be two points on the graph of a given function G.
Let the domain of G include all numbers $1 \leq x \leq 8$

Let G not be continuous at x = 3.
Let the range of G be every number such that $-7 \leq y \leq 5$.

Sketch what the graph of G might look like.

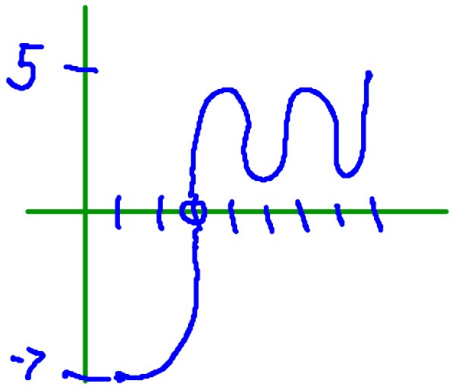


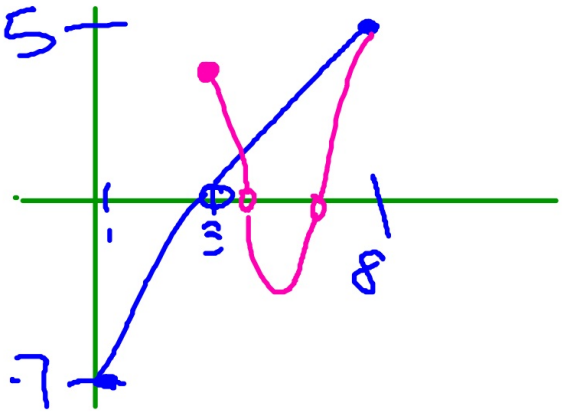


Let the two points (1, -7) and (8,5) be two points on the graph of a given function H.
Let the domain of H include all numbers $1 \le x \le 8$

Let H not be continuous at x = 3.
Let the range of H be every number such that $-7 \le y < 0$ and $0 < y \le 5$.

Sketch what the graph of H might look like.





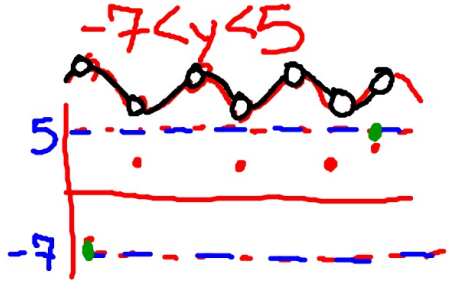
Statement 1: If (1, -7) and (8,5) are on the graph of some function J and if J is continuous at every number in the open interval $1 \le x \le 8$ then 4 must be in the range of J.

True

Statement 2: If (1, -7) and (8,5) are on the graph of some function K and for every number x in the $1 \le x \le 8$ there may be some number y in the interval ~~$-7 < y < 8$~~ which is not in the range of K.

True

K does not have to be continuous



Statement 3: If the two points (a, b) and (c, d) are on the graph of some function I, what conditions must be met by the function I to guarantee that there exists a point (e, f) such at ~~$a < e < b$ and $b < e < d$~~.

a<e<c and b<f<d

(1, -7) 1<e<8

(8,5) -7<f<5

The Intermediate Value Theorem (IVT)

If a function f is continuous on a closed interval $[a, b]$, and $f(a) \neq f(b)$, then for every value of u between $f(a)$ and $f(b)$, there exist at least one value of c in the open interval (a, b) so that $f(c) = u$.