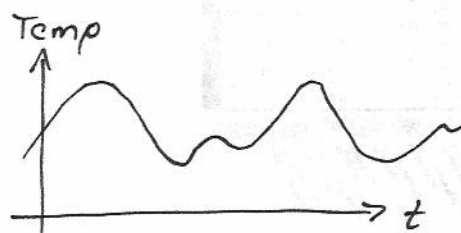


Review:

- Rational functions
- continuity
 - f is continuous on an interval if the graph^(over that interval) can be drawn without lifting the pen from the paper.

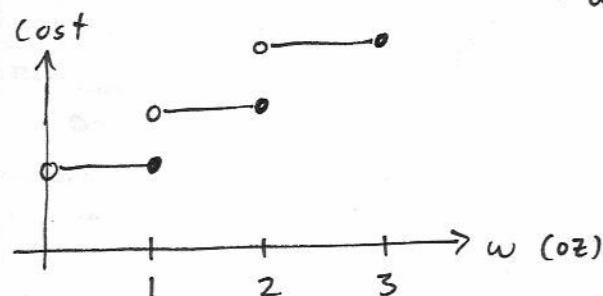
Examples:

Temp. as fn of time, t



Continuous on $\mathbb{R}$.

Shipping cost
~~Cost~~ as function of weight w



Not continuous on any open interval containing an integer.

- Polynomials and ^{exponential} ~~rational~~ functions are continuous on $\mathbb{R}$.
- Trig functions ^{power functions} and rational functions, ~~are~~ continuous where defined
- Addition, subtraction, mult. and comp. preserves continuity.

$\frac{x-1}{\sin x} + \frac{1}{x-2}$ is continuous everywhere except integer multiples of π and 2.

Intermediate value theorem

Suppose f is continuous on the interval $[a, b]$.

Then if k is between $f(a)$ and $f(b)$ then

$f(x) = k$ has a solution in $[a, b]$.