

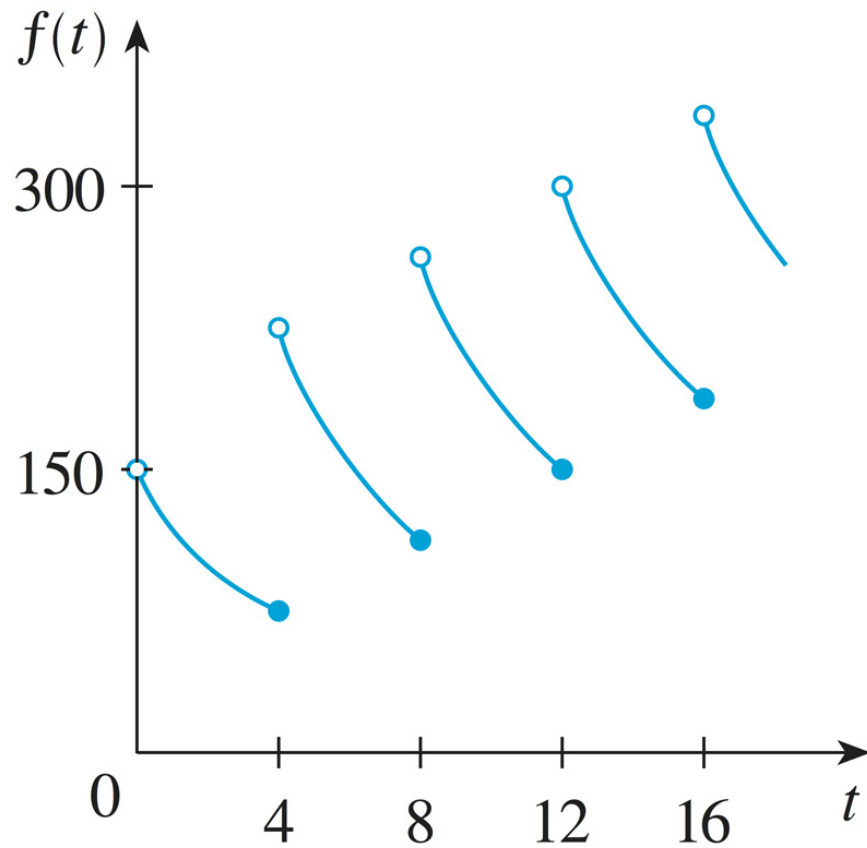
Name:

Sec. 2.2 - Limit of a function

Math 251 – Fall 2018

Section 2.2

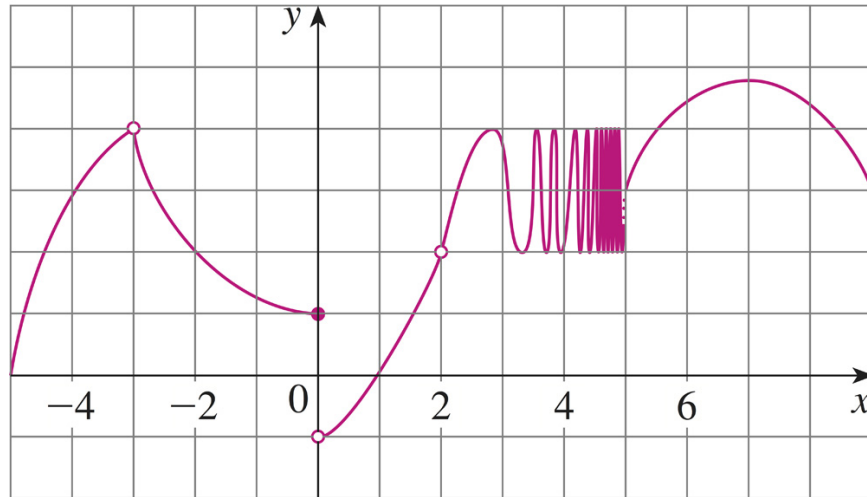
1. A patient receives a 150-mg injection of a drug every 4 hours. The graph shows the amount  $f(t)$  of the drug in the bloodstream after  $t$  hours. Find



$$\lim_{t \rightarrow 12^-} f(t) \text{ and } \lim_{t \rightarrow 12^+} f(t)$$

and explain the significance of these one sided limits.

2. For the function  $h$  whose graph is given, state the value of each quantity, if it exists. If it does not exist, explain why.



(a)  $\lim_{x \rightarrow 0^-} h(x)$

(b)  $\lim_{x \rightarrow 0^+} h(x)$

(c)  $\lim_{x \rightarrow 0} h(x)$

(d)  $h(2)$

(e)  $\lim_{x \rightarrow 2^-} h(x)$

(f)  $\lim_{x \rightarrow 2^+} h(x)$

(g)  $\lim_{x \rightarrow 2} h(x)$

(h)  $\lim_{x \rightarrow 4} h(x)$

3. Sketch the graph of a function such that

$$\lim_{x \rightarrow 3^+} f(x) = 4, \quad \lim_{x \rightarrow 3^-} f(x) = 2, \quad \lim_{x \rightarrow -2} f(x) = 2$$