

Problem Set 2

Due 9/13/2010

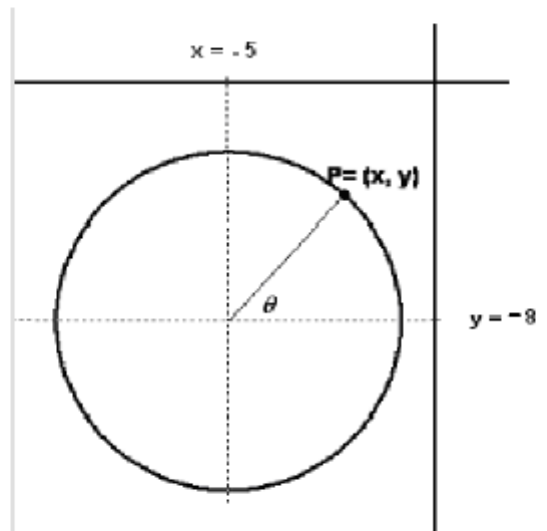
Stewart p 56

Use another piece of paper to complete your work. Use complete sentences as applicable.

Write a brief description of the meaning of the notation

1. If $f(2) = 4$, can you conclude anything about the limit of $f(x)$ as it approaches x approaches 2? Explain your reasoning.
2. If the limit of $f(x)$ as x approaches 2 is 4, can you conclude anything about $f(2)$? Explain your reasoning.
3. Identify three types of behavior associated with the nonexistence of a limit. Illustrate each type with a graph of a function.
4. What is meant by the term "indeterminate form"?
5. Determine the limit of the function describing atmospheric pressure on a plane as it descends from 32,000 ft to land at Manchester, NH. (The atmospheric pressure at Manchester is essentially 14.7 lb/sq. in)

1. A circle of radius 3 is centered at the point $(-5, -8)$. Find a formula for $f(\theta)$, the x -coordinate of the point $P = (x, y)$. On the circle specified by the angle θ in the circle below. (Think about trig function definitions)

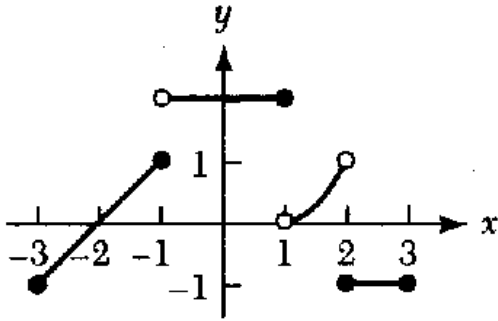


To help you out, fill in this table:

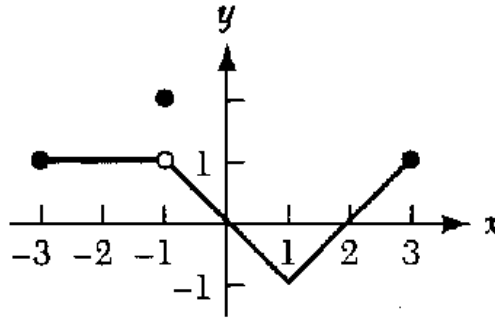
Central Angle Measure	0	$\frac{\pi}{2}$	π	$\frac{3\pi}{2}$	2π
x-coordinate of P					

Let f and g be the functions whose graphs are shown below Use the graphs to evaluate the following limits. If a limit doesn't exist explain why Note: $f(1) = 2$

Graph of f



Graph of g



(a) $\lim_{x \rightarrow 0} (f(x) + g(x))$

(e) $\lim_{x \rightarrow 0} \left(\frac{f(x)}{g(x)} \right)$

(b) $\lim_{x \rightarrow 2} (f(x) + g(x))$

(f) $\lim_{x \rightarrow 0} (f(x) \cdot \cos x)$

(c) $\lim_{x \rightarrow 1} (f(x) \cdot g(x))$

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

(d) $\lim_{x \rightarrow 2} (f(x) \cdot g(x))$