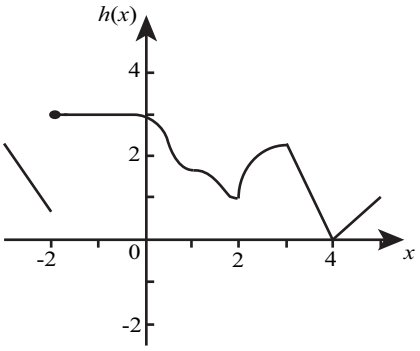
Limits of Functions Worksheet

Find the limits of the following functions.



x	$g(x)$
-2	4
-1.5	3.5
-1.009	3.14321
-1.00001	3.14122
-0.9994	3.14035
0	2

1. From the graph above find $\lim_{x\to 2} h(x)$.
2. From the graph above find $\lim_{x\to -2} h(x)$.
3. From the graph above find $\lim_{x\to 4} h(x)$.
4. From the graph above find $\lim_{x\to -2^+} h(x)$.
5. From the graph above find $\lim_{x\to 0^-} h(x)$.
6. From the table above estimate $\lim_{x\to -2^+} h(x)$.
7. Find $\lim_{x\to \frac{\pi}{2}} \frac{x\sin(2x)}{\cos(x)}$.
8. Find $\lim_{x\to 0} \frac{\ln(3^x)}{x} - 5x$.
9. Find $\lim_{y\to 1} \frac{y^3-1}{y-1}$.
10. For $f(x) = \begin{cases} x-2 & \text{if } x < -1; \\ ax^2 - 3 & \text{if } x \geq -1. \end{cases}$, find the value of a such that $\lim_{x\to -1} f(x)$ exists.
