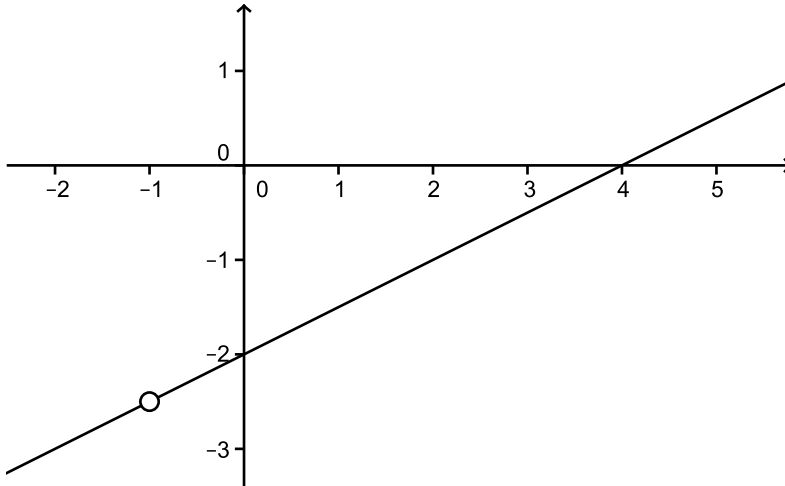


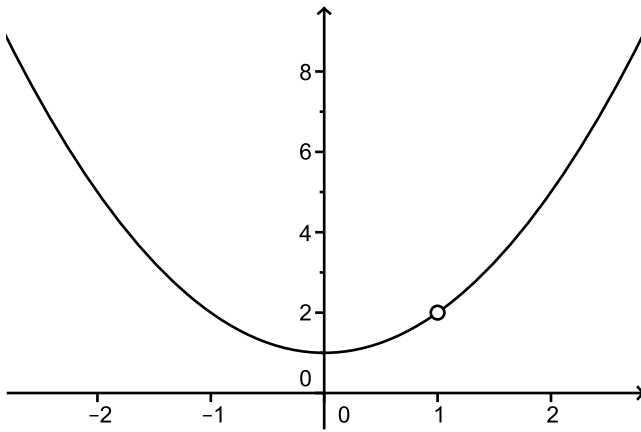
Math 30 – Workshop #3

1. Find a function whose graph might be:

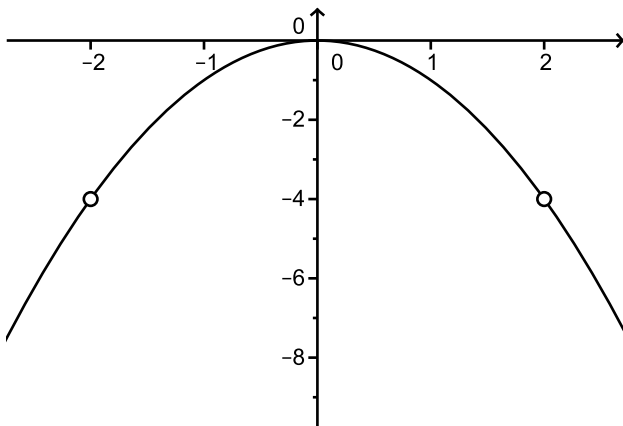
(a)



(b)

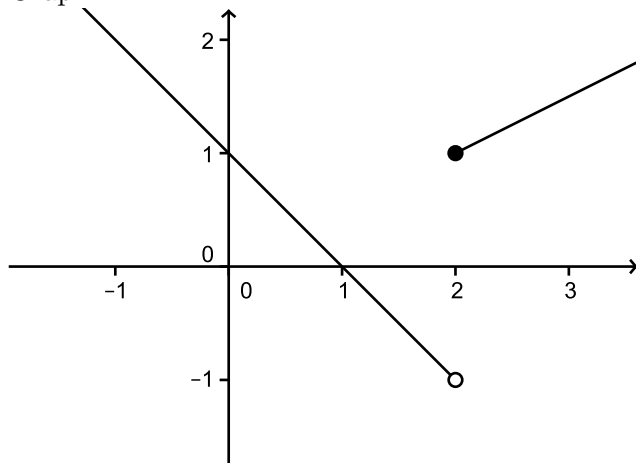


(c)

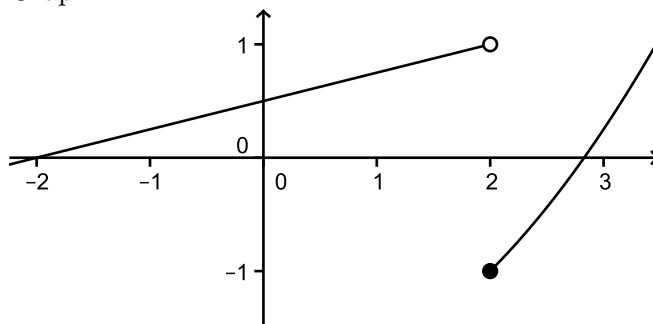


2.

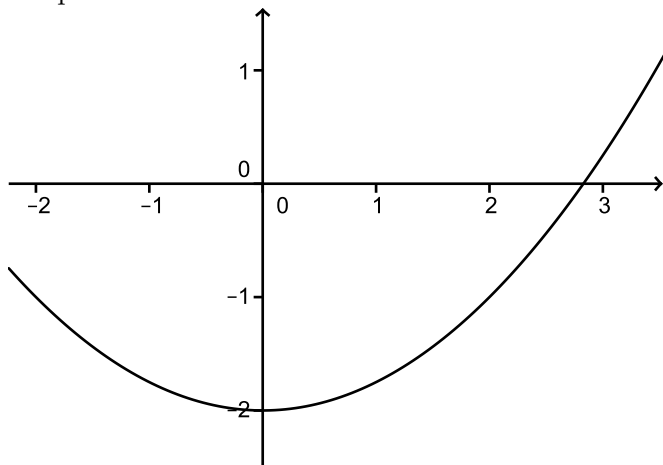
Graph 1



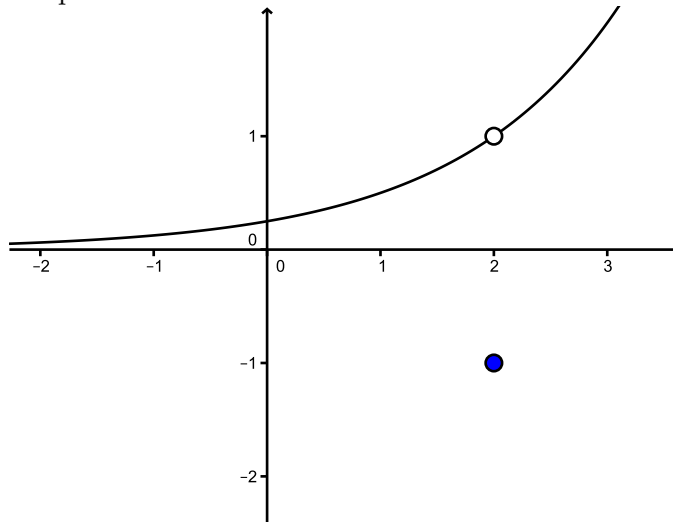
Graph 2



Graph 3



Graph 4



- (a) For the graphs shown above, in which is it true that $\lim_{x \rightarrow 2^-} f(x) = -1$?
- (b) For the graphs shown above, in which is it true that $\lim_{x \rightarrow 2^+} f(x) = 1$?
- (c) For the graphs shown above, in which is it true that $\lim_{x \rightarrow 2} f(x)$ does not exist?
- (d) For which of the graphs above is $f(2) = -1$?

3. Draw a graph for a function f for which $\lim_{x \rightarrow 2^-} f(x) = 1$, $\lim_{x \rightarrow 2^+} f(x) = 0$, and $f(2) = -1$.

4. Graph the functions below on your calculator, and use the graphs to predict the value of the indicated limit:

(a) $\lim_{x \rightarrow 0} \frac{\sin(2x)}{\sin x}$

(b) $\lim_{x \rightarrow 0} \frac{1 - \cos x}{x^2}$

(c) $\lim_{x \rightarrow 2} 3^{\frac{x^2-4}{x-2}}$