Calculus I Quiz #1

Given the functions

$$f(x) = x^2 - 5,$$

$$g(x) = \begin{cases} \cos(x) + 2 & x \geq 0 \\ \cos(x) - 2 & x < 0 \end{cases},$$

$$h(x) = \begin{cases} x^2 - 3 & x \geq 2 \\ 2x - 3 & x < 2 \end{cases},$$

sketch the graphs of each function on the domain $[-3, 3]$ and compute the following (writing "DNE" if the limit does not exist):

1. $\lim\limits_{x \to 0^-} f(x) =$

2. $\lim\limits_{x \to 0^+} f(x) =$

3. $\lim\limits_{x \to 0} f(x) =$

4. $\lim\limits_{x \to 0^-} g(x) =$

5. $\lim\limits_{x \to 0^+} g(x) =$

6. $\lim\limits_{x \to 0} g(x) =$

7. $\lim\limits_{x \to 0^-} h(x) =$

8. $\lim\limits_{x \to 0^+} h(x) =$

9. $\lim\limits_{x \to 0} h(x) =$

10. $\lim\limits_{x \to 2^-} f(x) =$

11. $\lim\limits_{x \to 2^+} f(x) =$

12. $\lim\limits_{x \to 2} f(x) =$

13. $\lim\limits_{x \to 2^-} g(x) =$

14. $\lim\limits_{x \to 2^+} g(x) =$

15. $\lim\limits_{x \to 2} g(x) =$

16. $\lim\limits_{x \to 2^-} h(x) =$

17. $\lim\limits_{x \to 2^+} h(x) =$

18. $\lim\limits_{x \to 2} h(x) =$