

2. $\lim_{x \rightarrow 5^+} f(x) = 0$

3. a) $\lim_{x \rightarrow -3} \sqrt{5x^2 + 2x} = \sqrt{5(-3)^2 + 2(-3)} = \sqrt{39}$

b) $\lim_{w \rightarrow 2} \frac{(w-2)(w+2)(w-3)}{(w-2)^2} = \lim_{w \rightarrow 2} \frac{(w+2)(w-3)}{(w-2)} = \text{DNE}$

c) $\frac{0}{1} = 0$

4. a) $\sqrt{\pi} + 2$

b) $\frac{\pi^2 - 1}{\pi + 1} = \pi - 1$

c) $(1 + \pi)^3$

5. $-1 \leq \cos\left(\frac{1}{x}\right) \leq 1$

$-x^2 \leq x^2 \cos\left(\frac{1}{x}\right) \leq x^2$

Now use squeeze thm.

since $x^2 \geq 0$ for all x
we can mult. entire inequality
by x^2 without flipping any
signs.

6. a) ∞
 b) $\frac{6}{9}$
 c) ∞
 d) $+\infty$

9. a) $\frac{17}{8}$
 b) $\frac{37}{10}$
 c) $\frac{37}{10}$

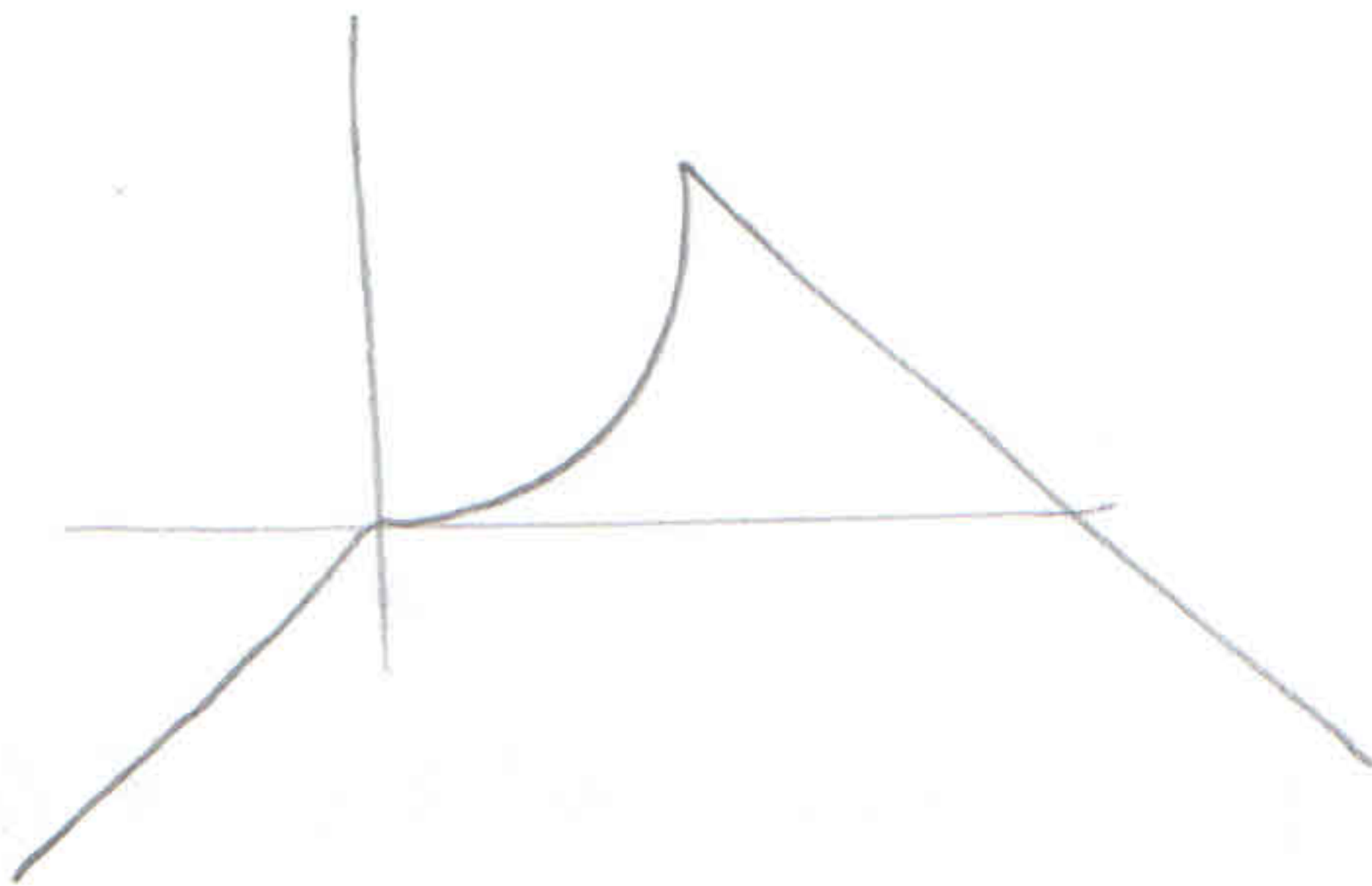
7. a) 3
 b) π
 c) ∞

10. a) -2
 b) ∞
 c) 1

8. a) $-\infty$
 b) $\frac{3}{2}$

11. a) nonremovable,
 b) continuous
 c) nonremovable
 d) removable.

12.



continuous.

13. $f(x) = x^3 + 3x$. Then $f(0) = 0$ and $f(1) = 4$,
 since f is continuous and $0 < 2 < 4$,
 there exists $c \in [0, 1]$ such that $f(c) = 2$.