

Due date: _____

Name: _____

1. For $\lim_{x \rightarrow 5} (2x - 4) = 6$, find the largest $\delta > 0$ that works for $\epsilon = 0.2$.

2. For $\lim_{x \rightarrow 3} (x^2 - 1) = 8$, find the largest $\delta > 0$ that works for $\epsilon = 1$.

3. For $\lim_{x \rightarrow 1} \sqrt{x + 3} = 2$, find the largest $\delta > 0$ that works for $\epsilon = 1$.

4. For $\lim_{x \rightarrow 2} (1 + \sqrt{x - 1}) = 2$, find the largest $\delta > 0$ that works for $\epsilon = 1$.

5. Prove that $\lim_{x \rightarrow 3} (4x - 1) = 11$ by using the ϵ, δ definition of a limit.

6. Prove that $\lim_{x \rightarrow -1} (2x + 3) = 1$ by using the ϵ, δ definition of a limit.

7. Prove that $\lim_{x \rightarrow 2} (3x - 5) = 1$ by using the ϵ, δ definition of a limit.

8. Prove that $\lim_{x \rightarrow 3} (x^2 - 2) = 7$ by using the ϵ, δ definition of a limit.

9. Prove that $\lim_{x \rightarrow 5} (2x^2 - 9) = 41$ by using the ϵ, δ definition of a limit.

Q: What has many keys but can't open any doors?

Optional exercises from the Stewart textbook if you'd like more practice:
2.4 (p.113) #1, 3, 13, 19-25 odd, 31