How do you solve a limit algebraically?

- You ALWAYS Try Direct Substitution First
  If Direct Substitution Does not work
- ✓ Factor/Simplify/Direct Substitution
- ✓ Rationalize/Simplify/Direct Substitution
- ✓ Multiply/Simplify/Direct Substitution
- ✓ Get Rid of Compound Fractions/Simplify/Direct Substitution

How can you rewrite each of these using the Limit Laws?

A.) $\lim_{x\to a}[f(x)+g(x)]$

B.) $\lim_{x\to a} k\cdot f(x)$

C.) $\lim_{x\to a} f(x)\cdot g(x)$

D.) $\lim_{x\to a} \frac{f(x)}{g(x)}$

Which ones only apply to limits?

A.) $\lim_{x\to a}[f(x)+g(x)] = \lim_{x\to a} f(x) + \lim_{x\to a} g(x)$

B.) $\lim_{x\to a} k\cdot f(x) = k\cdot \lim_{x\to a} f(x)$

C.) $\lim_{x\to a} f(x)\cdot g(x) = \lim_{x\to a} f(x)\cdot \lim_{x\to a} g(x)$

D.) $\lim_{x\to a} \frac{f(x)}{g(x)} = \lim_{x\to a} f(x) \,/\, \lim_{x\to a} g(x)$

Multiplication & Division of limits only apply to limits. They will not apply to derivatives and integration.