3.1.29 If this works,

$$\lim_{x\to 1}\sqrt{5x+4}=\sqrt{5(1)+4}=3.$$

It works!

3.1.53.A If this works,

$$\lim_{x\to -2}\frac{x^2-x-6}{x+2}=\frac{(-2)^2-(-2)-6}{(-2)+2}=\frac{0}{0}.$$

It doesn't work!

Since I got 0 on both sides of a fraction, I'll try to factor out $x-(-2)=x+2$ from both sides first. So if this works,

$$\lim_{x\to -2}\frac{x^2-x-6}{x+2}=\lim_{x\to -2}\frac{(x+2)(x-3)}{x+2}=\lim_{x\to -2}(x-3)=(-2)-3=-5.$$

Now it works!

3.2.11.C If this works,

$$\lim_{x\to 4}\frac{2x-4}{(x-4)^2}=\frac{2(4)-4}{\big((4)-4\big)^2}=\frac{4}{0}.$$

This doesn't quite work, but I may be able to get some kind of infinite limit.

As we approach the limit, $x\approx 4$ but $x\neq 4$:

$$\begin{aligned} x&\neq 4;\\ x-4&\neq 0;\\ (x-4)^2&>0. \end{aligned}$$

Therefore,

$$\lim_{x\to 4}\frac{2x-4}{(x-4)^2}=\frac{4}{0^+}=\infty.$$