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a) $\lim_{x \to 0} \left(\frac{x^2+1}{2x+1}\right)^{1/x} = (1^{\infty})$ IND

$$e^{\lim_{x\to 0} \left(\frac{x^2+1}{2x+1} - 1\right)\cdot \frac{1}{x}} = e^{\lim_{x\to 0} \left(\frac{x^2 \cancel{+1} - 2x \cancel{-1}}{2x+1}\right)\cdot \frac{1}{x}} =$$

$$= e^{\lim_{x\to 0} \frac{x^2-2x}{2x+1}\cdot\frac{1}{x}}$$

$$\lim_{x\to 0} \frac{x^2-2x}{(2x+1)\cdot x} = \left(\frac{0}{0}\right) = \lim_{x\to 0} \frac{\cancel{x}(x-2)}{(2x+1)\cdot \cancel{x}}$$

$$= \lim_{x\to 0} \frac{x-2}{2x+1} = \frac{-2}{+1} = -2.$$

$$= \boxed{e^{-2}}$$

b) $\lim_{x \to 2} \left(\frac{2x^2-x-1}{7-x}\right)^{\frac{1}{x-2}} = 1^{\left(\frac{1}{0}\right)} = (1^{\infty})$ IND

Formula erabilita:

$$e^{\lim_{x\to 2} \left(\frac{2x^2-x-1}{7-x} - 1\right)\cdot\frac{1}{x-2}} = e^{\lim_{x\to 2} \frac{2x^2 \cancel{-x} - 1 - 7 \cancel{+x}}{7-x}\cdot\frac{1}{x-2}}$$

$$= e^{\underbrace{\lim_{x\to 2} \frac{2x^2-8}{(7-x)(x-2)}}} = e^{8/5}$$

$$\lim_{x\to 2} \frac{2x^2-8}{(7-x)(x-2)} = \left(\frac{0}{0}\right) = \lim_{x\to 2} \frac{2(x+2)\cancel{(x-2)}}{(7-x)\cancel{(x-2)}}$$

$$= \lim_{x\to 2} \frac{2x+4}{-x+7} = \frac{8}{5}.$$