

Simplify: $\left(\frac{x^2 - 9x - 10}{2x^2 + x - 1}\right) \div \left(\frac{x^2 - 6x - 40}{4x^2 - 1}\right)$

Change division to multiplication, and use the reciprocal of the divisor.

$$\left(\frac{x^2 - 9x - 10}{2x^2 + x - 1}\right) \left(\frac{4x^2 - 1}{x^2 - 6x - 40}\right)$$

Factor each of the quadratics, reduce the fraction, and record the answer.

$$\frac{(x-10)(x+1)}{(2x-1)(x+1)} * \frac{(2x-1)(2x+1)}{(x-10)(x+4)} = \frac{2x+1}{x+4}$$