5.

Which of the following is the Quotient of $-3x^6 + 3x^5 + 9x^4 - 5x^3 - 5x^2 + x + 1$ divided by $(-x-1)^2(1-x)$

$$
\begin{array}{c}
\qquad\qquad\qquad +(\boxed{3x^3}) \qquad +(\boxed{-6x^2}) \qquad\qquad +(\boxed{2}) \\
\hline
(-x-1)^2(1-x) \quad (-3)x^6 \quad +(3)x^5 \quad +(9)x^4 \quad +(-5)x^3 \quad +(-5)x^2 \quad +(1)x \quad +(1)
\end{array}
$$

$(\boxed{-3x^6}) \quad +(\boxed{-3x^5}) \quad +(\boxed{3x^4}) \quad +(\boxed{3x^3})$

$+(6)x^5 \quad +(6)x^4 \quad +(-8)x^3 \quad +(-5)x^2 \quad +(1)x \quad +(1)$

$+(\boxed{6x^5}) \quad +(\boxed{6x^4}) \quad +(\boxed{-6x^3}) \quad +(\boxed{-6x^2})$

$+(-2)x^3 \quad +(1)x^2 \quad +(1)x \quad +(1)$

$+(\boxed{-2x^3}) \quad +(\boxed{-2x^2}) \quad +(\boxed{2x}) \quad +(\boxed{2})$

$+(\boxed{3x^2}) \quad +(\boxed{-x}) \quad +(\boxed{-1})$

Coefficient list:
{3, -6, 0, 2}