

4.

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

$$\begin{array}{r}
 \phantom{(-u-1)^2(2-u)} + (3u^3) + (-3u^2) + (2) \\
 \hline
 (-u-1)^2(2-u) \quad (-3)u^6 + (3)u^5 + (9)u^4 + (-5)u^3 + (-5)u^2 + (3)u + (2) \\
 \phantom{(-u-1)^2(2-u)} \quad (-3u^6) \phantom{+ (3)u^5} + (9u^4) + (6u^3) \\
 \phantom{(-u-1)^2(2-u)} \phantom{(-3u^6)} + (3)u^5 \phantom{+ (9u^4)} + (-11)u^3 + (-5)u^2 + (3)u + (2) \\
 \phantom{(-u-1)^2(2-u)} \phantom{(-3u^6)} + (3u^5) \phantom{+ (9u^4)} + (-9u^3) + (-6u^2) \\
 \phantom{(-u-1)^2(2-u)} \phantom{(-3u^6)} \phantom{+ (3u^5)} + (-2)u^3 + (1)u^2 + (3)u + (2) \\
 \phantom{(-u-1)^2(2-u)} \phantom{(-3u^6)} \phantom{+ (3u^5)} + (-2u^3) \phantom{+ (1)u^2} + (6u) + (4) \\
 \phantom{(-u-1)^2(2-u)} \phantom{(-3u^6)} \phantom{+ (3u^5)} \phantom{+ (-2u^3)} + (u^2) + (-3u) + (-2)
 \end{array}$$

Coefficient list:

$\{3, -3, 0, 2\}$