

4.

Which of the following is the Quotient of  $-3y^6 - 9y^5 + 6y^4 + 34y^3 + 21y^2 + 4y + 8$  divided by  $(-y - 1)y^2$ 

$$\begin{array}{r}
 \phantom{(-y-1)y^2} \phantom{(-3)y^6} \phantom{+(-9)y^5} \phantom{+(6)y^4} + (\boxed{3y^3}) + (\boxed{6y^2}) + (\boxed{-12y}) + (\boxed{-22}) \\
 \hline
 \boxed{(-y-1)y^2} \phantom{+(-9)y^5} \phantom{+(6)y^4} \phantom{+(34)y^3} \phantom{+(21)y^2} \phantom{+(4)y} \phantom{+(8)} \\
 \phantom{(-y-1)y^2} (\boxed{-3y^6}) + (\boxed{-3y^5}) \\
 \phantom{(-y-1)y^2} \phantom{(-3y^6)} + (\boxed{-6y^5}) + (\boxed{6y^4}) + (\boxed{34y^3}) + (\boxed{21y^2}) + (\boxed{4y}) + (\boxed{8}) \\
 \phantom{(-y-1)y^2} \phantom{(-3y^6)} + (\boxed{-6y^5}) + (\boxed{-6y^4}) \\
 \phantom{(-y-1)y^2} \phantom{(-3y^6)} \phantom{(-6y^5)} + (\boxed{12y^4}) + (\boxed{34y^3}) + (\boxed{21y^2}) + (\boxed{4y}) + (\boxed{8}) \\
 \phantom{(-y-1)y^2} \phantom{(-3y^6)} \phantom{(-6y^5)} + (\boxed{12y^4}) + (\boxed{12y^3}) \\
 \phantom{(-y-1)y^2} \phantom{(-3y^6)} \phantom{(-6y^5)} \phantom{(-6y^4)} + (\boxed{22y^3}) + (\boxed{21y^2}) + (\boxed{4y}) + (\boxed{8}) \\
 \phantom{(-y-1)y^2} \phantom{(-3y^6)} \phantom{(-6y^5)} + (\boxed{22y^3}) + (\boxed{22y^2}) \\
 \phantom{(-y-1)y^2} \phantom{(-3y^6)} \phantom{(-6y^5)} \phantom{(-6y^4)} + (\boxed{-y^2}) + (\boxed{4y}) + (\boxed{8})
 \end{array}$$

Coefficient list:

 $\{3, 6, -12, -22\}$