5.

Which of the following is the Quotient of $-3y^6 + 21y^4 - 8y^3 - 36y^2 + 15y + 2$ divided by $-(-y-2)^2 y$

$$+ (\boxed{3y^3}) \quad + (\boxed{-12y^2}) \quad + (\boxed{15y}) \quad + (\boxed{-4})$$

$-(-y-2)^2 y$	$(-3)y^6$		$+(21)y^4$	$+(-8)y^3$	$+(-36)y^2$	$+(15)y$	$+(2)$
	$(\boxed{-3y^6})$	$+(\boxed{-12y^5})$	$+(\boxed{-12y^4})$				
		$+(12)y^5$	$+(33)y^4$	$+(-8)y^3$	$+(-36)y^2$	$+(15)y$	$+(2)$
		$+(\boxed{12y^5})$	$+(\boxed{48y^4})$	$+(\boxed{48y^3})$			
			$+(-15)y^4$	$+(-56)y^3$	$+(-36)y^2$	$+(15)y$	$+(2)$
			$+(\boxed{-15y^4})$	$+(\boxed{-60y^3})$	$+(\boxed{-60y^2})$		
				$+(4)y^3$	$+(24)y^2$	$+(15)y$	$+(2)$
				$+(\boxed{4y^3})$	$+(\boxed{16y^2})$	$+(\boxed{16y})$	
					$+(\boxed{8y^2})$	$+(\boxed{-y})$	$+(\boxed{2})$

Coefficient list:
{3, -12, 15, -4}