5.

Which of the following is the remainder of $2k^3 + 1$ divided by $k + 2$

$$
\begin{array}{r}
+ (2k^2) \quad + (-4k) \quad + (8) \\
\hline
k+2 \, \big) \, (2)k^3 \qquad\qquad\qquad + (1) \\
(2k^3) \quad + (4k^2) \\
+ (-4)k^2 \qquad\qquad + (1) \\
+ (-4k^2) \quad + (-8k) \\
+ (8)k \qquad + (1) \\
+ (8k) \qquad + (16) \\
+ (-15)
\end{array}
$$