

5.

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

$$\begin{array}{r}
 + (\boxed{g^2}) + (\boxed{g}) + (\boxed{-1}) \\
 \hline
 \boxed{g+2} (1)g^3 + (3)g^2 + (1)g + (1) \\
 (\boxed{g^3}) + (\boxed{2g^2}) \\
 + (\boxed{1}g^2) + (\boxed{1}g) + (\boxed{1}) \\
 + (\boxed{g^2}) + (\boxed{2g}) \\
 + (\boxed{-1}g) + (\boxed{1}) \\
 + (\boxed{-g}) + (\boxed{-2}) \\
 + (\boxed{3})
 \end{array}$$