5.

Which of the following is the quotient of $-z^3 + 2z^2 - 3$ divided by $z + 3$

$$
\begin{array}{r|llll}
 & & +(\boxed{-z^2}) & +(\boxed{5z}) & +(\boxed{-15}) \\
\hline
\boxed{z+3} & (-1)z^3 & +(2)z^2 & & +(-3) \\
 & (\boxed{-z^3}) & +(\boxed{-3z^2}) & & \\
 & & +(5)z^2 & & +(-3) \\
 & & +(\boxed{5z^2}) & +(\boxed{15z}) & \\
 & & & +(-15)z & +(-3) \\
 & & & +(\boxed{-15z}) & +(\boxed{-45}) \\
 & & & & +(\boxed{42})
\end{array}
$$