22. Given that $(x^2 - 4)$ is a factor of $x^3 + cx^2 + dx - 12$, find the values of the coefficients c and d.

Hence factorise the cubic polynomial fully.

Remaindee = 0

DMAS

$$
\begin{array}{r}
X +C \\
x^2 + 0x - 4) \overline{\smash{)} x^3 + cx^2 + dx - 12} \\
\mp x^3 \mp 0x^2 \pm 4x \\
\hline
cx^2 + (4+d)x - 12 \\
\mp cx^2 \mp 0x \mp 4c \\
\hline
0x + 0
\end{array}
$$

Conclude

① $(4+d)x - 0x = 0x$

$4 + d = 0$

$d = -4$

② $-12 + 4c = 0$

$\dfrac{4c}{4} = \dfrac{12}{4}$

$c = 3$