



1 (iii) $p(x) = x^4 - 5x + 6$

$g(x) = 2 - x^2$
 $= -x^2 + 2$

$$\begin{array}{r}
 \overline{-x^2 - 2} \\
 -x^2+2 \overline{) x^4 - 5x + 6} \\
 \underline{x^4} \\
 - 5x + 6 \\
 \underline{+ 2x^2} \\
 2x^2 - 5x + 6 \\
 \underline{2x^2} \underline{- 4} \\
 - 5x + 10
 \end{array}$$

quot. = $-x^2 - 2$
 rem. = $-5x + 10$

2 (i) let $g(t) = t^2 - 3$, $p(t) = 2t^4 + 3t^3 - 2t^2 - 9t - 12$

$$\begin{array}{r}
 \overline{2t^2 + 3t + 4} \\
 t^2-3 \overline{) 2t^4 + 3t^3 - 2t^2 - 9t - 12} \\
 \underline{2t^4} \\
 - 6t^2 - 9t - 12 \\
 \underline{+ 4t^2} \\
 3t^3 + 4t^2 - 9t - 12 \\
 \underline{3t^3} \\
 4t^2 - 12 \\
 \underline{4t^2} \\
 \underline{- 12} \\
 \underline{+ 12} \\
 \underline{0}
 \end{array}$$

∴ remainder = 0

∴ $g(t)$ is a factor of $p(t)$.