5(iii) let $p(x) = x^3+13x^2+32x+20$

possible zeros are

$\pm1, \pm2, \pm4, \pm5, \pm10, \pm20$

$p(-1) = (-1)^3+13(-1)^2+32(-1)+20$

$= -1+13-32+20$

$= 33-33$

$= 0$

$\therefore$ $x+1$ is a factor of $p(x)$ by factor theorem

$$
\begin{array}{r|l}
 & x^2+12x+20 \\
x+1 & x^3+13x^2+32x+20 \\
 & \cancel{x^3}+x^2 \\
 & \underline{-\quad\ -\qquad\qquad} \\
 & \cancel{12x^2}+32x+20 \\
 & 12x^2+12x \\
 & \underline{-\qquad\ -\qquad} \\
 & \cancel{20x}+\cancel{20} \\
 & 20x+20 \\
 & \underline{-\qquad -} \\
 & 0
\end{array}
$$

$p(x) = (x+1)(x^2+12x+20)$

$= (x+1)(x^2+10x+2x+20)$

$= (x+1)[x(x+10)+2(x+10)]$

$= (x+1)(x+10)(x+2)$

$= (x+1)(x+2)(x+10)$

5(iv) let

$p(y) = 2y^3+y^2-2y-1$

possible zeros ±1

$p(1) = 2\times1^3+1^2-2\times1-1$

$= 2+1-2-1$

$= 3-3$

$= 0$

$y-1$ is a factor of $p(y)$ by factor theorem

$$
\begin{array}{r|l}
 & 2y^2+3y+1 \\
y-1 & 2y^3+y^2-2y-1 \\
 & \cancel{2y^3}-2y^2 \\
 & \underline{-\qquad +\qquad} \\
 & \cancel{3y^2}-2y-1 \\
 & 3y^2-3y \\
 & \underline{-\qquad +} \\
 & \cancel{y}-\cancel{1} \\
 & y-1 \\
 & \underline{-\quad +} \\
 & 0
\end{array}
$$

$p(y) = (y-1)(2y^2+3y+1)$

$= (y-1)[2y^2+2y+y+1]$

$= (y-1)[2y(y+1)+1(y+1)]$

$= (y-1)(y+1)(2y+1)$