



5 (i)

$$\begin{aligned}
 & p^2 + 6p + 8 \\
 & = \underbrace{p^2 + 2p} + \underbrace{4p + 8} \\
 & = p(p+2) + 4(p+2) \\
 & = (p+2)(p+4)
 \end{aligned}$$

required

$$ab = \text{I term} \times \text{III term}$$

$$= 8p^2$$

$$a+b = \text{II term}$$

$$= 6p$$

divisor	quotient
1	8

$$1 \pm 8 \neq 6$$

2	4
---	---

$$2 + 4 = 6$$

$$2 \times 4 = 8$$

which is required

$$\begin{aligned}
 \text{(ii)} \quad & q^2 - 10q + 21 \\
 & = q^2 - 7q - 3q + 21 \\
 & \Rightarrow q(q-7) - 3(q-7) \\
 & = (q-7)(q-3)
 \end{aligned}$$

$$\begin{aligned}
 \text{(iii)} \quad & p^2 + 6p - 16 \\
 & = p^2 + 8p - 2p - 16 \\
 & = p(p+8) - 2(p+8) \\
 & = (p+8)(p-2)
 \end{aligned}$$