

$$\begin{aligned}
 d) \quad & x^2 + 9x + 8 = 0 \\
 i) \quad & \cancel{x^2 + 9x + 8} \\
 & \cancel{x^2 + x + 8x + 8} = 0 \\
 & x^2 + 8x + x + 8 = 0 \\
 & x(x+1) + 8(x+1) = 0 \\
 & (x+8)(x+1) = 0 \\
 & x = -8, -1
 \end{aligned}$$

$$\begin{aligned}
 ii) \quad & 12x^2 - 5x - 3 = 0 \\
 & 12x^2 + 4x - 9x - 3 = 0 \\
 & 4x(3x+1) - 3(3x+1) = 0 \\
 & (4x-3)(3x+1) = 0 \\
 & x = 3/4, -1/3
 \end{aligned}$$

$$\begin{aligned}
 iii) \quad & 2x^2 + 17x + 30 = 0 \\
 & 2x^2 + 12x + 5x + 30 = 0 \\
 & 2x(x+6) + 5(x+6) = 0 \\
 & (2x+5)(x+6) = 0 \\
 & x = -6, -5/2
 \end{aligned}$$

$$\begin{aligned}
 iv) \quad & x^2 - 256 \\
 & (x-16)(x+16) \\
 & x = 16, -16
 \end{aligned}$$

$$\begin{aligned}
 e) \quad & (x+5)^2 - x^2 - 32 = (x+1)(x+2) - x^2 \\
 & \cancel{x^2 + 10x + 25} - x^2 - 32 = \cancel{x^2 + 3x + 2} - x^2 \\
 & x^2 + 10x + 25 - x^2 - 32 = x^2 + 3x + 2 - x^2 \\
 & 10x - 7 = 3x + 2 \\
 & 7x = 9 \\
 & x = 9/7
 \end{aligned}$$