

$$x^2 - \underline{12}x + \underline{32} = (x - \underline{8})(x - \underline{4})$$

$$\text{Product} = 32$$

$$\text{Sum} = +12 = \begin{matrix} 6+a \\ 6-a \end{matrix}$$

$$(1) x^2 - 12x + 33 = 0 \Rightarrow x = \frac{12 \pm \sqrt{144 - 4 \cdot 1 \cdot 33}}{2 \cdot 1}$$

$$= 6 \pm \sqrt{3} \leftarrow \frac{\sqrt{12}}{2} = \frac{\sqrt{4} \sqrt{3}}{2}$$

$$x^2 - 12x + 36 = -34 + 36$$

$$\left(\frac{-12}{2}\right)^2 = (-6)^2 = 36$$

$$(x-6)^2 = 2$$

$$x-6 = \pm\sqrt{2}$$

