

$$= \frac{8 \pm \sqrt{24}}{2} = \frac{8 \pm \sqrt{4 \cdot 6}}{2} = \frac{8 \pm \sqrt{4} \cdot \sqrt{6}}{2} = \frac{8 \pm 2\sqrt{6}}{2}$$

$$= \frac{2(4 \pm \sqrt{6})}{2} = \underline{4 \pm \sqrt{6}}$$

$$\text{TAI: } \frac{8 \pm 2\sqrt{6}}{2} = \frac{8}{2} \pm \frac{2\sqrt{6}}{2} = 4 \pm \sqrt{6}$$

$$\text{TAI: } \frac{\cancel{8} \pm \cancel{2}\sqrt{6}}{\cancel{2}} = 4 \pm \sqrt{6}$$

$$\text{TAI: } (x-4)^2 = 6 \quad | \sqrt{\quad}$$

$$\Rightarrow x-4 = \pm \sqrt{6} \quad | +4$$

$$\Rightarrow x = 4 \pm \sqrt{6}$$

11.2 a) $x^2 + 3 = 5x \quad (\Rightarrow) x^2 - 5x + 3 = 0$

$$\Rightarrow x = \frac{-(-5) \pm \sqrt{(-5)^2 - 4 \cdot 1 \cdot 3}}{2 \cdot 1} = \frac{5 \pm \sqrt{25 - 12}}{2}$$

$$= \frac{5 \pm \sqrt{13}}{2}$$

$$\begin{cases} a = 1 \\ b = -5 \\ c = 3 \end{cases}$$

b) $3x^2 + 2x = -1 \quad (\Rightarrow) 3x^2 + 2x + 1 = 0$

$$\Rightarrow x = \frac{-2 \pm \sqrt{2^2 - 4 \cdot 3 \cdot 1}}{2 \cdot 3} = \frac{-2 \pm \sqrt{4 - 12}}{6} = \frac{-2 \pm \sqrt{-8}}{6} \quad \downarrow \text{eigentlich}$$

$$\begin{cases} a = 3 \\ b = 2 \\ c = 1 \end{cases}$$

11.6 a) $f(x) = -3x^2 - 2x + 1 = 0$

$$\Rightarrow x = \frac{-(-2) \pm \sqrt{(-2)^2 - 4 \cdot (-3) \cdot 1}}{2 \cdot (-3)} = \frac{2 \pm \sqrt{4 + 12}}{-6}$$

$$\begin{cases} a = -3 \\ b = -2 \\ c = 1 \end{cases}$$

$$= \frac{2 \pm \sqrt{16}}{-6} = \frac{2 \pm 4}{-6} = \begin{cases} \frac{6}{-6} = -1 \\ \frac{-2}{-6} = \frac{1}{3} \end{cases}$$

b) $g(x) = 7x^2 - 56 = 0 \quad | +56$

$$\Rightarrow 7x^2 = 56 \quad | :7$$

$$\Rightarrow x^2 = 8 \quad | \sqrt{\quad}$$

$$\Rightarrow x = \pm \sqrt{8} = \pm \sqrt{4 \cdot 2} = \pm 2\sqrt{2}$$