

W44

$$(\sqrt{3}+2)^2 =$$

$$(a+b)^2 = a^2 + 2ab + b^2$$

$$= (\sqrt{3})^2 + 2 \cdot 2\sqrt{3} + 2^2 = 3 + 4\sqrt{3} + 4 = 7 + 4\sqrt{3}$$

W45

$$L(x) = 2(x^2 + 4)(x-3)(x+1)$$

BRILL HERLEITUNG $x_1 = 3$; $x_2 = -1$
NEUWEISEN

W46

$$\begin{matrix} x+1 & 5 & 10 \\ a_1 & a_2 & a_3 \end{matrix}$$

$$\frac{3}{2} + \frac{1}{2} = \frac{5}{2}$$

$$\frac{a_2}{a_1} = \frac{a_3}{a_2}$$

$$\frac{5}{2}; 5; 10$$

$$\frac{5}{x+1} = \frac{10}{5} \Rightarrow$$

$$25 = 10(x+1)$$

$$25 = 10x + 10$$

$$10x = 25 - 10$$

$$10x = 15 \quad : 10$$

$$x = \frac{15}{10} = \frac{3}{2}$$

W47

$$\frac{\cos 40^\circ}{\cos 50^\circ}$$

$$\cdot \lg 40^\circ =$$

$$\lg 40^\circ = \frac{\sin 40^\circ}{\cos 40^\circ}$$

$$= \frac{\cancel{\cos 40^\circ}}{\cos 50^\circ} \cdot \frac{\sin 40^\circ}{\cancel{\cos 40^\circ}} = \frac{\sin 40^\circ}{\cos 50^\circ} =$$

$$\cos(90^\circ) = \sin(90^\circ - 50^\circ) = \sin 40^\circ$$

$$= \frac{\sin 40^\circ}{\sin 40^\circ} = 1$$

W48

$$x^2 + y^2 - 8x + 4y - 5 = 0$$

$$x^2 - 8x + 16 + y^2 + 4y + 4 - 5 - 20 = 0$$

$$(x-4)^2 + (y+2)^2 = 25$$

$$x_5 = 4 \quad ; \quad y_5 = -2 \quad r = 5$$