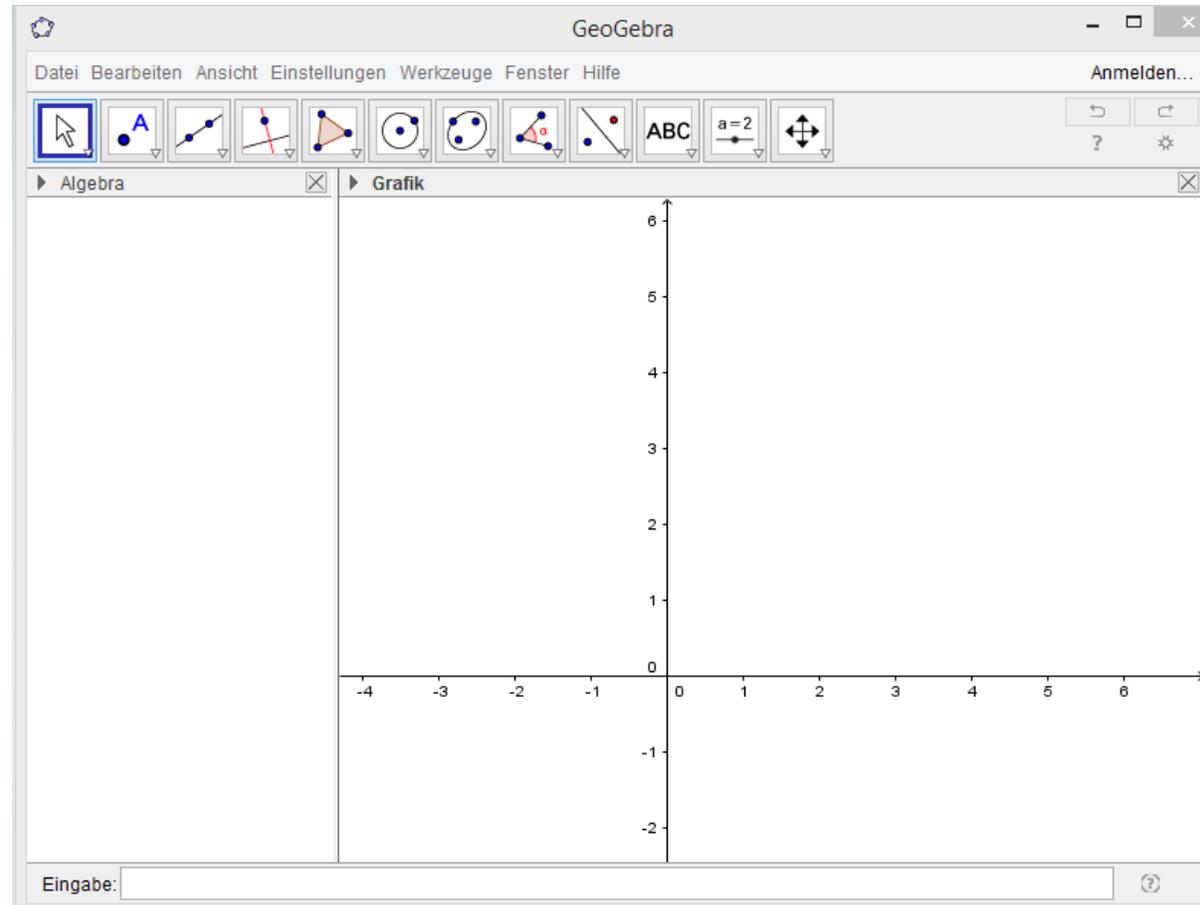


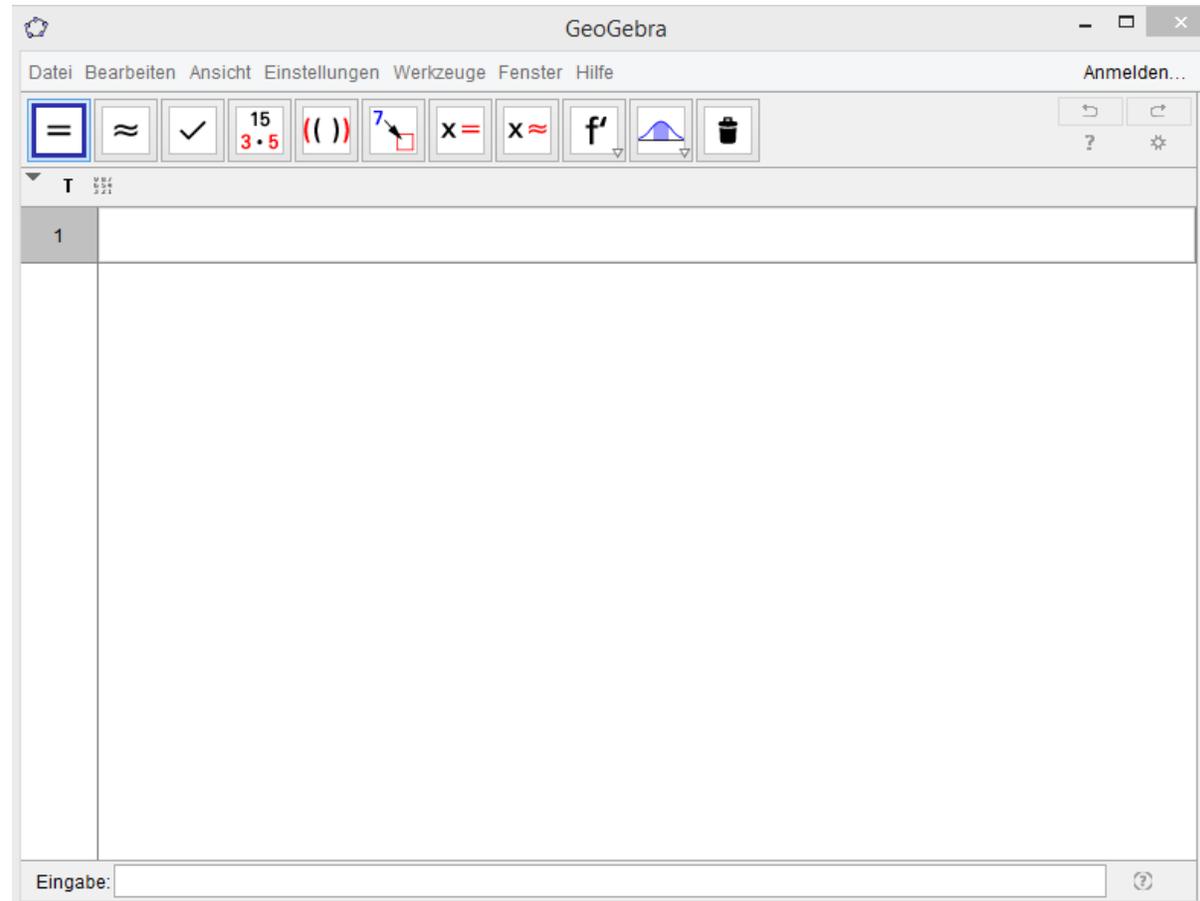
Technologie-Anleitung

Lösen von quadratischen Bruchgleichungen

Starte das Programm Geogebra.



Wähle CAS (unter Ansicht).



Lösen von quadratischen Bruchgleichungen

Um eine quadratische Bruchgleichung in Geogebra zu lösen, gibt es mehrere Möglichkeiten:

- Drücke die Taste .
- Verwende den Befehl Löse[<Gleichung>, <Variable>].
Die Lösung(en) werden ohne den Zusatz „x =“ angezeigt.
- Verwende den Befehl Löse[<Gleichung in x>], wenn die Gleichung nach x gelöst werden soll.
- Drücke die Taste bzw. gib den Befehl NLöse [<Gleichung>] ein, um die numerische Berechnung der Lösung zu ermitteln.

Die Lösungen werden immer in geschwungenen Klammern (Mengenklammern) angezeigt.

Beachte!

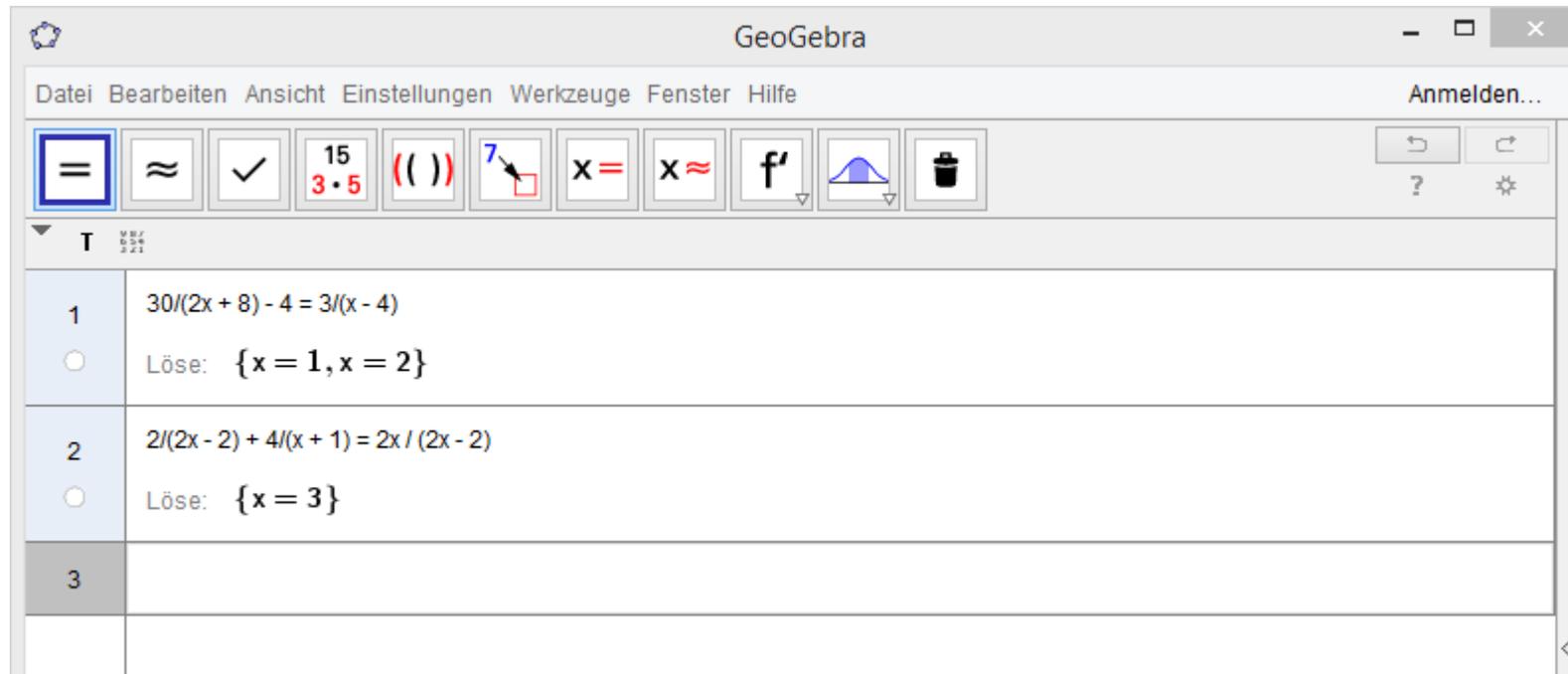
Beachte, dass es sinnvoll ist Zähler und Nenner der Brüche in extra Klammern zu setzen, um ein korrektes Ergebnis zu erhalten.

The screenshot shows the GeoGebra interface with the algebra view. The menu bar includes 'Datei', 'Bearbeiten', 'Ansicht', 'Einstellungen', 'Werkzeuge', 'Fenster', and 'Hilfe'. The toolbar contains various mathematical symbols and functions. The algebra view shows three rows:

1	$3x + 3/x + 2 = x + 1/x - 2$ Löse: $\{x = -1\}$ So nicht!
2	$(3x + 3)/(x + 2) = (x + 1)/(x - 2)$ Löse: $\{x = -1, x = 4\}$
3	

Quadratische Bruchgleichungen lösen

z.B.: Lösungswege 5 / 331 + 332 d)

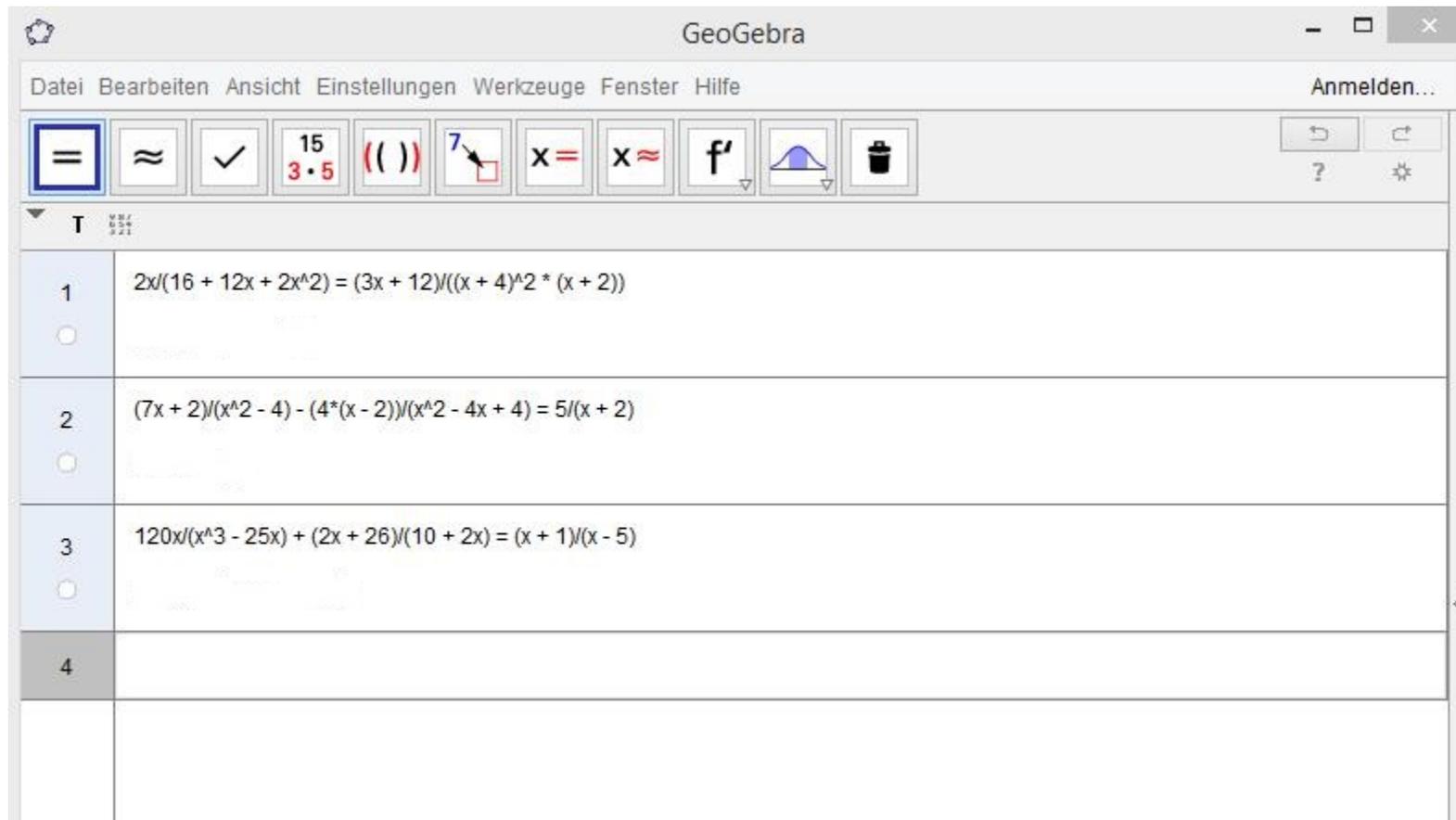


The screenshot shows the GeoGebra application window. The title bar reads "GeoGebra". The menu bar includes "Datei", "Bearbeiten", "Ansicht", "Einstellungen", "Werkzeuge", "Fenster", and "Hilfe". The toolbar contains various mathematical symbols: an equals sign (highlighted with a blue border), an approximation symbol, a checkmark, a fraction $\frac{15}{3 \cdot 5}$, parentheses $(())$, a power symbol 7 , a variable $x =$, an approximation symbol $x \approx$, a derivative symbol f' , a graphing icon, and a trash can. The main workspace displays a list of equations and their solutions:

1	$30/(2x + 8) - 4 = 3/(x - 4)$
<input type="radio"/>	Löse: $\{x = 1, x = 2\}$
2	$2/(2x - 2) + 4/(x + 1) = 2x / (2x - 2)$
<input type="radio"/>	Löse: $\{x = 3\}$
3	

Versuche es nun selbst.

z.B. Lösungswege 5/ 333 d, e, f)



The screenshot shows the GeoGebra application window. The title bar reads "GeoGebra". The menu bar includes "Datei", "Bearbeiten", "Ansicht", "Einstellungen", "Werkzeuge", "Fenster", and "Hilfe". The toolbar contains various icons for mathematical operations: an equals sign, an approximation symbol, a checkmark, a calculator icon showing "15" and "3.5", parentheses, a power function icon with "7", a variable assignment icon "x =", an approximation icon "x ≈", a derivative icon "f'", a graphing icon, and a trash can. The main workspace displays a list of equations to be solved, numbered 1 through 4. Each equation has a radio button to its left. The first three equations are selected.

Equation Number	Equation
1	$2x(16 + 12x + 2x^2) = (3x + 12)/((x + 4)^2 * (x + 2))$
2	$(7x + 2)/(x^2 - 4) - (4*(x - 2))/(x^2 - 4x + 4) = 5/(x + 2)$
3	$120x/(x^3 - 25x) + (2x + 26)/(10 + 2x) = (x + 1)/(x - 5)$
4	

Lösung:

The screenshot shows the GeoGebra application window. The title bar reads "GeoGebra". The menu bar includes "Datei", "Bearbeiten", "Ansicht", "Einstellungen", "Werkzeuge", "Fenster", "Hilfe", and "Anmelden...". The toolbar contains icons for "=", "≈", "✓", "15", "3.5", "(())", "7", "x=", "x≈", "f'", a graphing icon, and a trash icon. Below the toolbar is a list of four algebraic problems, each with a radio button to select it. The first problem is selected.

Problem	Equation	Solution
1	$2x/(16 + 12x + 2x^2) = (3x + 12)/((x + 4)^2 * (x + 2))$	Löse: $\{x = 3\}$
2	$(7x + 2)/(x^2 - 4) - (4*(x - 2))/(x^2 - 4x + 4) = 5/(x + 2)$	Löse: $\{\}$
3	$120x/(x^3 - 25x) + (2x + 26)/(10 + 2x) = (x + 1)/(x - 5)$	Löse: $\{x = -25\}$
4		

Ich hoffe, die Anleitung war
hilfreich!