

$$\mathbb{G} = \mathbb{Q}$$

1. Berechne die Lösungsmenge:

	Aufgabe	Lösung
a)	$4 - 3x = 2x + 7$	$\mathbb{L} = \{-0,6\}$
b)	$4 - 2x = 4x - 8$	
c)	$-6 - x = x - 10$	
d)	$-3x + 9 = 5x - 1$	
e)	$-30x = 15x + 45$	
f)	$8 - x = x + 3$	
g)	$x - 4 - 3x = x + 7x - 9$	
h)	$5x - 4 + 4x = 7x + 8 - 6x - 4$	
i)	$x - 2 + 7x = -4x - 9x - 7 - x - 17$	

2. Berechne die Lösungsmenge:

	Aufgabe	Lösung
a)	$8 - (x + 3) = x + 2$	$\mathbb{L} = \{1,5\}$
b)	$1 - (2x + 4) = -x - 1$	
c)	$5(-2x + 4) = -(2x - 8)$	
d)	$2(8x + 3) = 6(2x - 1)$	
e)	$4 - (5 - (x + 3) - x) = x + 7$	
f)	$6 - (x - (5x + 3) - x) = 6x + 1$	
g)	$-2(1 - (x + 3)) = x - 4$	
h)	$1 + (-8 - (-x - 7)) = 5(x - 1) - 1$	
i)	$x - (-2 - 3(x + 2)) = -2(x - 4) - 12$	

**3. Berechne die Lösungsmenge:**

	Aufgabe	Lösung
a)	$(x-2)(3+x) = x^2 - 7$	$\mathbb{L} = \{-1\}$
b)	$(x-8)(2-x) = (x-1)(6-x) - 4$	
c)	$(2x+1)(3x-4) = (6x+3)(6+x)$	
d)	$(3x+1)^2 = (9x-1)(x-2) + 24$	
e)	$(4x-2)^2 = (2x+5)(8x+7) + 4$	
f)	$(x+7)^2 = (2x+5)^2 - 3x^2$	
g)	$(x-4)^2 = (x+5)^2$	
h)	$\left(x - \frac{1}{2}\right)^2 = \left(x + \frac{3}{4}\right)^2$	
i)	$\left(3x - \frac{1}{3}\right)^2 = \left(2x + \frac{1}{6}\right)^2 + 5x^2$	

**4. Berechne die Lösungsmenge:**

	Aufgabe	Lösung
a)	$\frac{x+3}{2} + \frac{x-1}{3} = x$	$\mathbb{L} = \{7\}$
b)	$\frac{x-1}{4} + \frac{x-2}{3} = x-1$	
c)	$\frac{x+2}{4} + \frac{3-x}{5} = 4$	
d)	$\frac{x+2}{4} + \frac{3-x}{5} - \frac{1-x}{2} = x$	
e)	$\frac{x-1}{6} + \frac{3+x}{7} - \frac{1}{3} = 12$	
f)	$\frac{1}{9}(2x+1) + \frac{1}{2}(3-2x) - \frac{15}{6} = 143$	
g)	$\frac{x-7}{2} + \frac{1}{4}(7-2x) - 2 = 5x$	

**1. Berechne die Lösungsmenge:**

	Aufgabe	Lösung
a)	$4 - 3x = 2x + 7$	$\mathbb{L} = \{-0,6\}$
b)	$4 - 2x = 4x - 8$	$\mathbb{L} = \{2\}$
c)	$-6 - x = x - 10$	$\mathbb{L} = \{2\}$
d)	$-3x + 9 = 5x - 1$	$\mathbb{L} = \{1,25\}$
e)	$-30x = 15x + 45$	$\mathbb{L} = \{-1\}$
f)	$8 - x = x + 3$	$\mathbb{L} = \{2,5\}$
g)	$x - 4 - 3x = x + 7x - 9$	$\mathbb{L} = \{0,5\}$
h)	$5x - 4 + 4x = 7x + 8 - 6x - 4$	$\mathbb{L} = \{1\}$
i)	$x - 2 + 7x = -4x - 9x - 7 - x - 17$	$\mathbb{L} = \{-1\}$

**2. Berechne die Lösungsmenge:**

	Aufgabe	Lösung
a)	$8 - (x + 3) = x + 2$	$\mathbb{L} = \{1,5\}$
b)	$1 - (2x + 4) = -x - 1$	$\mathbb{L} = \{-2\}$
c)	$5(-2x + 4) = -(2x - 8)$	$\mathbb{L} = \{1,5\}$
d)	$2(8x + 3) = 6(2x - 1)$	$\mathbb{L} = \{-3\}$
e)	$4 - (5 - (x + 3) - x) = x + 7$	$\mathbb{L} = \{5\}$
f)	$6 - (x - (5x + 3) - x) = 6x + 1$	$\mathbb{L} = \{8\}$
g)	$-2(1 - (x + 3)) = x - 4$	$\mathbb{L} = \{-8\}$
h)	$1 + (-8 - (-x - 7)) = 5(x - 1) - 1$	$\mathbb{L} = \{1,5\}$
i)	$x - (-2 - 3(x + 2)) = -2(x - 4) - 12$	$\mathbb{L} = \{-2\}$

**3. Berechne die Lösungsmenge:**

	Aufgabe	Lösung
a)	$(x - 2)(3 + x) = x^2 - 7$	$\mathbb{L} = \{-1\}$
b)	$(x - 8)(2 - x) = (x - 1)(6 - x) - 4$	$\mathbb{L} = \{2\}$
c)	$(2x + 1)(3x - 4) = (6x + 3)(6 + x)$	$\mathbb{L} = \{-0,5\}$
d)	$(3x + 1)^2 = (9x - 1)(x - 2) + 24$	$\mathbb{L} = \{1\}$
e)	$(4x - 2)^2 = (2x + 5)(8x + 7) + 4$	$\mathbb{L} = \{-0,5\}$
f)	$(x + 7)^2 = (2x + 5)^2 - 3x^2$	$\mathbb{L} = \{4\}$
g)	$(x - 4)^2 = (x + 5)^2$	$\mathbb{L} = \{-0,5\}$
h)	$\left(x - \frac{1}{2}\right)^2 = \left(x + \frac{3}{4}\right)^2$	$\mathbb{L} = \{-1/8\}$
i)	$\left(3x - \frac{1}{3}\right)^2 = \left(2x + \frac{1}{6}\right)^2 + 5x^2$	$\mathbb{L} = \{1/32\}$

**4. Berechne die Lösungsmenge:**

	Aufgabe	Lösung
a)	$\frac{x+3}{2} + \frac{x-1}{3} = x$	$\mathbb{L} = \{7\}$
b)	$\frac{x-1}{4} + \frac{x-2}{3} = x - 1$	$\mathbb{L} = \{0,2\}$
c)	$\frac{x+2}{4} + \frac{3-x}{5} = 4$	$\mathbb{L} = \{58\}$
d)	$\frac{x+2}{4} + \frac{3-x}{5} - \frac{1-x}{2} = x$	$\mathbb{L} = \{1 \frac{1}{3}\}$
e)	$\frac{x-1}{6} + \frac{3+x}{7} - \frac{1}{3} = 12$	$\mathbb{L} = \{39\}$
f)	$\frac{1}{9}(2x+1) + \frac{1}{2}(3-2x) - \frac{15}{6} = 143$	$\mathbb{L} = \{-185\}$
g)	$\frac{x-7}{2} + \frac{1}{4}(7-2x) - 2 = 5x$	$\mathbb{L} = \{-0,75\}$