

Bestimme die Definitionsmenge und die Lösungsmenge:

$$1. \quad \frac{x+3}{x-5} = \frac{x-2}{x-6}$$

$$2. \quad \frac{x-5}{x-3} = \frac{1}{2x-2} + \frac{x-7}{x-1}$$

$$3. \quad \frac{1}{x-1} + \frac{2}{x+1} - \frac{11}{x^2-1} = 0$$

$$4. \quad \frac{3}{z+4} - \frac{2}{z-4} = \frac{5z-20}{z^2-16}$$

$$5. \quad \frac{2+7x}{1+x} = \frac{4-9x}{1-x} - \frac{12-2x^2}{1-x^2}$$

$$6. \quad \frac{1}{x-3} - \frac{2}{x+3} = \frac{3}{x^2-9}$$

$$7. \quad \frac{x}{x-1} + \frac{x+1}{3(x-1)} - \frac{x^2}{x^2-2x+1} = \frac{1}{3}$$

$$8. \quad \frac{2}{x} = \frac{1}{x-1} + \frac{1}{x+2} - \frac{6}{x(x-1)(x+2)}$$

$$9. \quad \frac{1}{a-2} + \frac{1}{a+1} = \frac{2}{a-1}$$

$$10. \quad \frac{3}{p+2} + \frac{4}{p-1} - \frac{7}{p-2} = 0$$

$$11. \quad \frac{4}{x+3} + \frac{3}{2x} - \frac{31}{2x(x+3)} = 0$$

$$12. \quad \frac{1}{x-1} - \frac{2}{x^2} = \frac{1}{x}$$

$$13. \quad \frac{5}{z-2} = \frac{6}{z-5}$$

$$14. \quad \frac{3}{v-1} + \frac{4}{1-v} = 0$$

15.  $\frac{5}{1-k} = \frac{-5}{k-1}$
16.  $\frac{2x+3}{x-5} = \frac{6x-13}{3x+11}$
17.  $\frac{2x-3}{x+3} = \frac{6x-13}{3x+11}$
18.  $\frac{9x-2}{12x-17} - \frac{6x+7}{8x-5} = 0$
19.  $\frac{x+8}{3x+3} + \frac{x+2}{2x+2} = 1$
20.  $\frac{2x-3,5}{3-x} = -\frac{5}{2x-6}$
21.  $\frac{4+x}{x} = \frac{3+x}{x-1}$
22.  $\frac{x}{x-1} = -\frac{1-x}{x}$
23.  $\frac{x}{x+7} + \frac{x-4}{x-5} = 2$
24.  $\frac{7}{x-2} - \frac{5}{x+2} = \frac{30}{x^2-4}$
25.  $\frac{2}{2+y} - \frac{1}{y-2} = \frac{-4}{4-y^2}$
26.  $\frac{3}{3x+4} - \frac{14}{3x-4} + \frac{35}{9x^2-16} = 0$
27.  $\frac{39}{16x^2-25} - \frac{15}{4x-5} + \frac{52}{4x+5} = 0$
28.  $\frac{(x-1)(x-2)}{x-3} = \frac{(x-3)^2}{x-6}$