

Lösungen zu Kapitel 3.5, Rationale Funktionen

Kapitel 3.5.2, Gebrochenrationale Funktionen

$$1) \quad \frac{2}{x-3} + \frac{4}{x-5}$$

$$2) \quad 3x+5 + \frac{2}{3x-4} + \frac{5}{2x-3}$$

$$3) \quad \frac{2}{(x-1)^2} + \frac{3}{(x-1)} + \frac{4}{(x+1)}$$

$$4) \quad \frac{3}{x-1} - \frac{4}{x+1} + \frac{2}{x^2+1}$$

$$5) \quad \frac{-1}{x+1} + \frac{2}{x-3}$$

$$6) \quad \frac{-4}{(x+2)^2} + \frac{1}{x+1}$$

$$7) \quad \frac{1}{x-2} + \frac{1}{x-3} - \frac{2x}{x^2+9}$$

$$8) \quad \frac{5}{x-3} - \frac{4}{x-2}$$

$$9) \quad \frac{5}{3 \cdot (x-6)} + \frac{7}{2 \cdot (x+3)}$$

$$10) \quad \frac{3}{x+1} + \frac{1}{x-3} - \frac{2}{x-1}$$

$$11) \quad \frac{9}{2x} - \frac{17}{x-1} + \frac{35}{2 \cdot (x-2)}$$

$$12) \quad \frac{13}{14 \cdot (x-3)} + \frac{13}{35 \cdot (x+4)} - \frac{3}{10 \cdot (x-1)}$$

$$13) \quad \frac{5}{2 \cdot (x-1)} - \frac{15}{x-2} + \frac{31}{2 \cdot (x-3)}$$

$$14) \quad \frac{3}{x-1} + \frac{4}{x-2} - \frac{2}{x+1}$$

$$15) \quad 2x+5 + \frac{1}{3 \cdot (x-1)} - \frac{2}{x+1} + \frac{11}{3 \cdot (x+2)}$$

$$16) \quad \frac{2}{x-1} - \frac{3}{x-5} + \frac{4}{x+3}$$

$$17) \quad 2x - \frac{5}{4x} + \frac{5}{8 \cdot (x+2)} + \frac{5}{8 \cdot (x-2)}$$

$$18) \quad 2x - \frac{5}{4x} + \frac{21}{8 \cdot (x+2)} + \frac{21}{8 \cdot (x-2)}$$

$$19) \quad x-2 + \frac{1}{6 \cdot (x-1)} - \frac{1}{2 \cdot (x+1)} + \frac{16}{3 \cdot (x+2)}$$

$$20) \quad \frac{1}{x+1} - \frac{2}{(2x+1)^3} + \frac{40}{3 \cdot (2x+1)^2} - \frac{16}{3 \cdot (2x+1)}$$

$$21) \quad \frac{2}{(x-1)^3} + \frac{1}{(x-1)^2} + \frac{2}{x-1} - \frac{1}{x}$$

$$22) \quad x^2 - 2x + 3 - \frac{12}{(3x-2)^2}$$

$$23) \quad \frac{3}{3x+4} + \frac{5}{(x-2)^2}$$

$$24) \quad \frac{x+4}{x^2+4} - \frac{1}{x+1}$$

$$25) \quad \frac{5x+9}{x^2+1} - \frac{5x+3}{x^2+3}$$

$$26) \quad \frac{2}{x-2} - \frac{2x-1}{x^2-x+1}$$

$$27) \frac{1}{x-1} - \frac{x}{x^2+9}$$

$$28) \frac{1}{x} + \frac{x}{x^2+4}$$

$$29) \frac{1}{x-1} - \frac{1+x}{x^2+1}$$

$$30) \frac{1}{x-2} - \frac{2}{(x+1)^2}$$