

**Bestimme Lage und Art der Definitionslücken sowie Nullstellen**

1. 
$$f(x) = \frac{4x-5}{x^2-8x+16}$$

2. 
$$f(x) = \frac{3x-x^2}{9-x^2}$$

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

4. 
$$f(x) = \frac{10x^2+15x}{4x^3-9x}$$

5. 
$$f(x) = \frac{3x^2-5x}{x^2+2x-3}$$

6. 
$$f(x) = \frac{x^2-x^3}{x^2-1}$$

7. 
$$f(x) = \frac{x^2-7x+6}{x^4-5x^2}$$

8. 
$$f(x) = \frac{x^4+2\sqrt{3}x^3+3x^2}{(x^2-3)(x^3-10x^2+25x)}$$