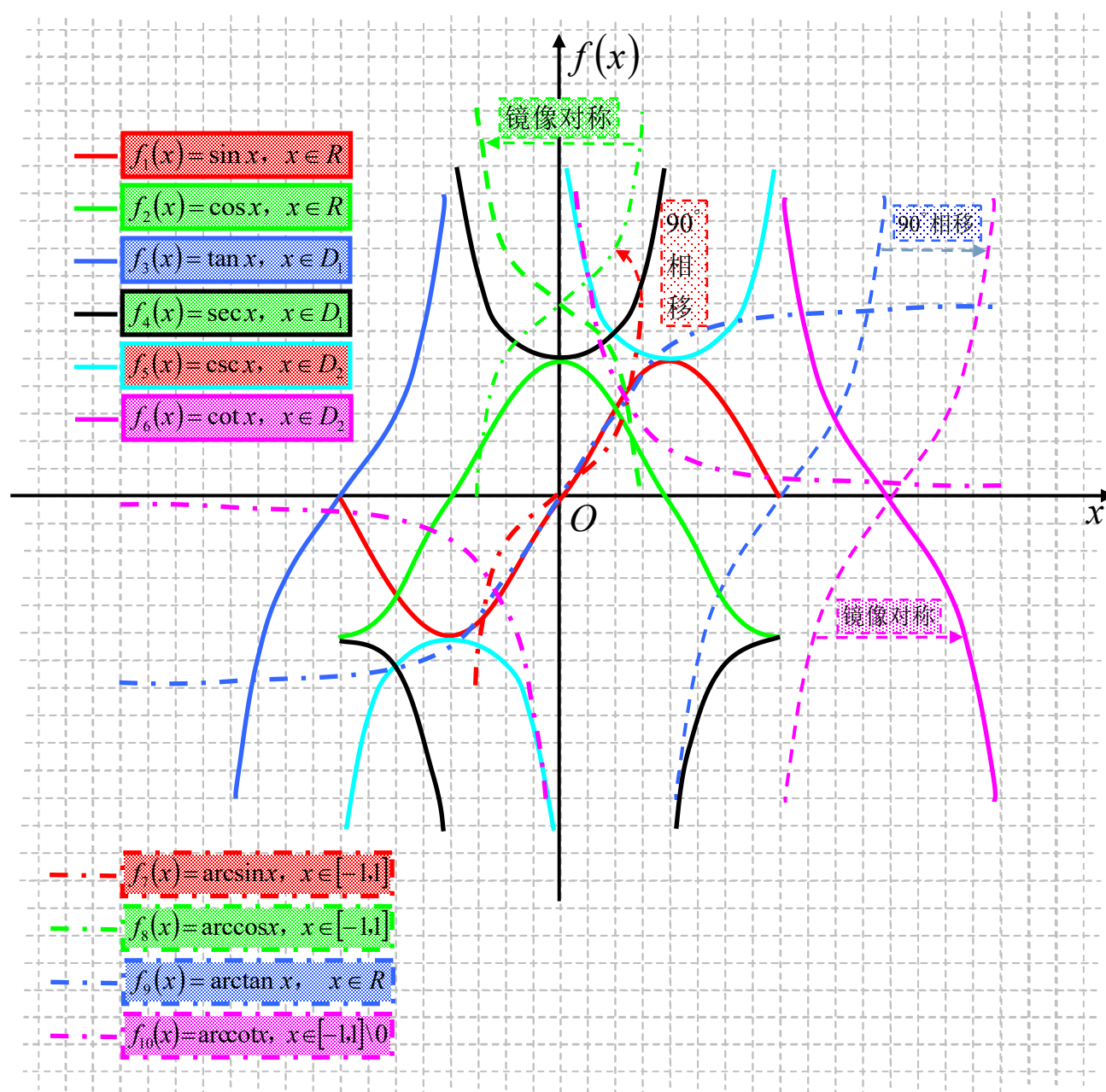


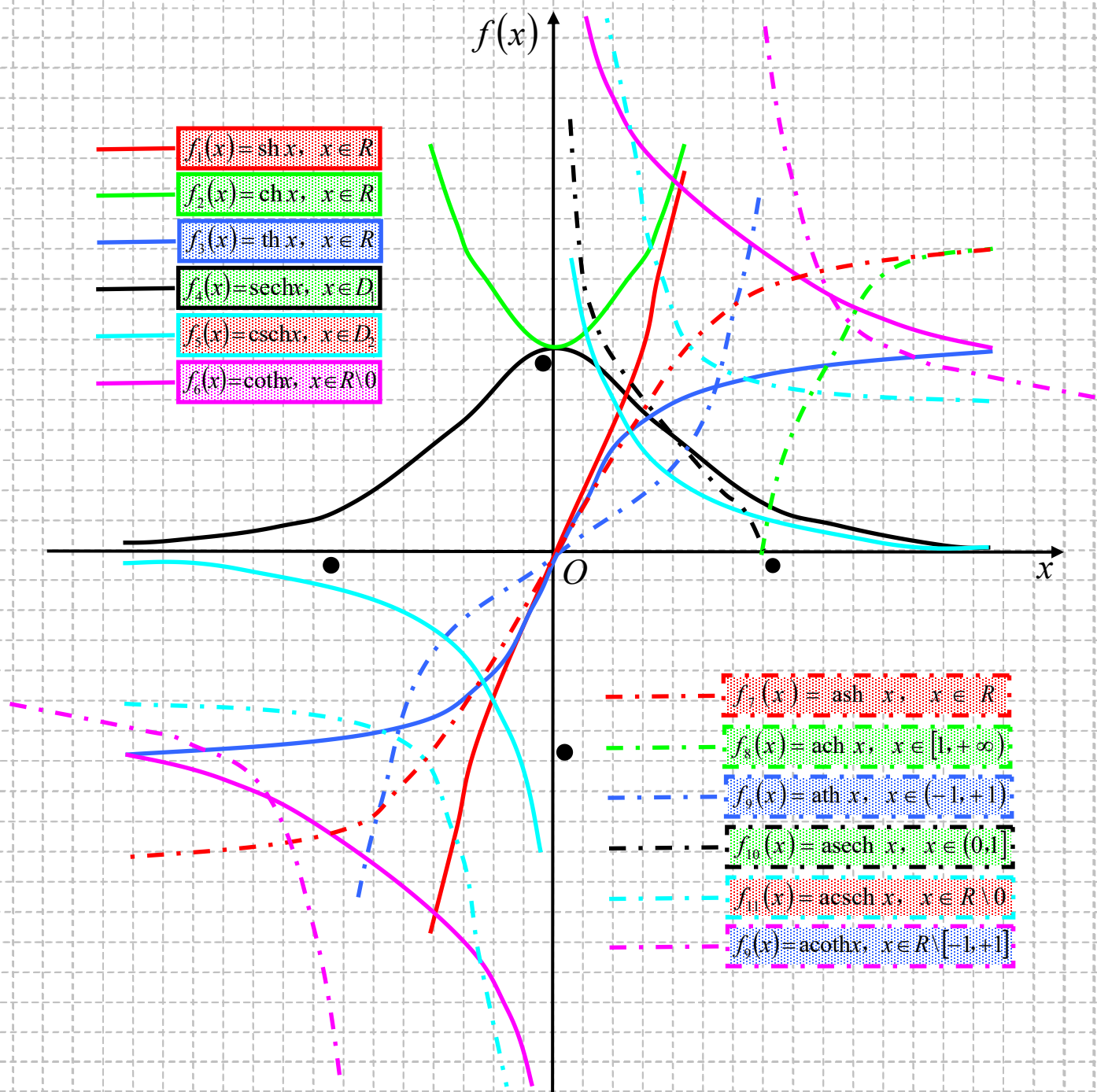
函数图像全家福

# 三角函数大集合



# 函数图像全家福

## 双曲函数大集合



$$\text{sh } x = \frac{e^x - e^{-x}}{2}; \quad \text{ch } x = \frac{e^x + e^{-x}}{2}; \quad \text{th } x = \frac{e^x - e^{-x}}{e^x + e^{-x}}; \quad \text{sech } x = \frac{1}{\text{ch } x}; \quad \text{csch } x = \frac{1}{\text{sh } x}; \quad \text{coth } x = \frac{1}{\text{th } x};$$

$$\text{ash } x = \ln(x + \sqrt{x^2 + 1}); \quad \text{ach } x = \ln(x + \sqrt{x^2 - 1}); \quad \text{ath } x = \ln\left(\frac{1+x}{1-x}\right)^{\frac{1}{2}}$$

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