Determinare il dominio, le intersezioni con gli assi e la positività delle seguenti funzioni:

1. $y=\dfrac{\log^2 x-2\log x-1}{\log x}$ $\quad y=\left(\dfrac{\text{lox}-1}{\log x}\right)^2$ $\quad y=\dfrac{1}{e^{2x}-e^{x}}$

2. $y=\dfrac{\log^2 x-\log x}{\log x+1}$ $\quad y=\dfrac{1-\log x}{x^2}$ $\quad y=\dfrac{1}{2\log x-1}$

3. $y=x+\log\left(e^{x}-1\right)$ $\quad y=\dfrac{2\log x-1}{2x}$ $\quad y=\dfrac{\log x}{\sqrt{x}}$

4. $y=\dfrac{2}{\log(x+2)}-\dfrac{1}{\log^2(x+2)}$ $\quad y=\dfrac{1}{x^2\log x}$ $\quad y=\dfrac{\sqrt{1+\log x}}{x}$

5. $\log\left[(-x-1)\sqrt{x+2}\right]$ $\quad y=\dfrac{1}{1+e^{1+x}}$ $\quad y=\log\dfrac{\sqrt{x}-1}{\sqrt{x}+1}$

6. $y=\dfrac{x}{2-\log 3x}$ $\quad y=xe^{-2x^2}$ $\quad y=\log(\log(x-1))$

7. $y=xe^{\frac{1}{\log x}}$ $\quad y=xe^{\frac{1}{x-1}}$ $\quad y=e^{\frac{\log x}{x}}$

8. $y=(1-x)\sqrt{-\log(1-x)}$ $\quad y=x\left(\log^2 x-\dfrac{1}{5}\right)$ $\quad y=\dfrac{1}{x(\log x-1)}$

9. $y=x\left(3\log^2 x-1\right)$ $\quad y=\sqrt{\log(1+5x)}$