Determinare il dominio di definizione delle seguenti funzioni

1) $y=\dfrac{x^2(3x^2-1)}{x-1}$ $\quad D=\mathbb{R}-\{1\}$

2) $y=\dfrac{x-2}{\sqrt{x+2}}$ $\quad D=]-2;+\infty[$

3) $y=\sqrt{2-x}-2\sqrt{-x-1}$ $\quad D=]-\infty;-1]$

4) $y=\dfrac{x+2}{\sqrt{x-2}+\sqrt{1-x}}$ $\quad D=\varnothing$

5) $y=\dfrac{\sqrt{x-1}+1}{\sqrt{2x-5}}$ $\quad D=\left]\dfrac{5}{2};+\infty\right[$

6) $y=\dfrac{\sqrt{1-x}+\sqrt[3]{x+1}}{2-\sqrt[4]{x+2}}$ $\quad D=[-2;1]$

7) $y=\dfrac{\sqrt{3x-6}+1}{\sqrt{x+1}-2}$ $\quad D=[2;+\infty[-\{3\}$

8) $y=\sqrt{2-x}-\dfrac{1}{\sqrt{\sqrt{x}-1}}$ $\quad D=]1;2]$

9) $y=\dfrac{3-\sqrt{-x}}{|x|-1}$, $\quad D=]-\infty;0]-\{-1\}$

10) $y=\sqrt[4]{6-|x+4|}$ $\quad D=[-10;2]$

11) $y=\dfrac{1-\sqrt[3]{x-6}}{x^2+|x-2|}$ $\quad D=R$

12) $y=\sqrt{e^x-e^{2x}}$ $\quad D=]-\infty;0]$

13) $y=\dfrac{\ln\left(e^x-1\right)}{|x-2|-1}$ $\quad D=]0;+\infty[-\{1;3\}$

14) $y=\dfrac{\ln\left(\log_2 x-1\right)}{2^{x-1}-4}$ $\quad D=]2;+\infty[-\{3\}$

15) $y=\dfrac{\log_{\frac{1}{2}}\left(x^2-1\right)}{\sqrt{2x+1}-3}$ $\quad D=]1;+\infty[-\{4\}$

16) $y=\dfrac{1}{\log_2(3x-1)-3}-\dfrac{1}{\log_{\frac{1}{2}}(\log_4 x)}$ $\quad D=]1;+\infty[-\{3;4\}$

17) $y=\log_x(2x-1)$ $\quad D=\left]\dfrac{1}{2};+\infty\right[-\{1\}$

18) $y=\dfrac{\log_a(2x-a)}{\sqrt{a-1}+1}$ $\quad D=\left]\dfrac{a}{2};+\infty\right[$, con $a>1$