Logarithmic Equations

Version 2

Name: _____ **Date**: _____ **Score**: _____

Direction: Solve each logarithmic equations. Check your solutions to exclude extraneous answers. Show all your answer in the space provided.

1) $\log_5\left(\frac{x^2}{2}\right)-\log_5(x)=1$

2) $\log(2x-1)+\log(x+1)=\log(x)$

3) $\log_4(x)-\log_4\sqrt{x+3}=\log_4\sqrt{x-1}$

4) $\log_2\left(\sqrt[3]{x}\right)=\frac{1}{3}\log_2\left(\frac{1}{x}\right)+1$

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Direction: Solve each logarithmic equations. Check your solutions to exclude extraneous answers. Show all your answer in the space provided.

1) $\log_5\left(\frac{x^2}{2}\right)-\log_5(x)=1$

$x=10$

2) $\log(2x-1)+\log(x+1)=\log(x)$

$x=\frac{\sqrt{2}}{2}$

3) $\log_4(x)-\log_4\sqrt{x+3}=\log_4\sqrt{x-1}$

$x=\frac{3}{2}$

4) $\log_2\left(\sqrt[3]{x}\right)=\frac{1}{3}\log_2\left(\frac{1}{x}\right)+1$

$x=2\sqrt{2}$