Solve each logarithmic equation.

1. $\log(x+2) - \log(2x) = \log\left(\dfrac{2}{3}\right)$

2. $\log x + \log(x-2) = \log(x+4)$

3. $\log_{1/2}\left(x^2 + x\right) - \log_{1/2}\left(x^2 - x\right) = -1$

Answers

1. $x = 6$

2. $x = 4$

3. $x = 3$