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2e) $\left[(x+y)^{1/2} + (xy)^{1/2} = 4\right]\frac{d}{dx}$

$\frac{1}{2}(x+y)^{-1/2}\cdot\frac{d}{dx}(x+y) + \frac{1}{2}(xy)^{-1/2}\cdot\frac{d}{dx}(xy) = 0$

$\frac{1}{2}(x+y)^{-1/2}\left[1+(1)\frac{dy}{dx}\right] + \frac{1}{2}(xy)^{-1/2}\left[(1)(y)+(x)(1)\frac{dy}{dx}\right] = 0$

$\frac{1}{2}(x+y)^{-1/2} + \frac{1}{2}(x+y)^{-1/2}\frac{dy}{dx} + \frac{1}{2}(xy)^{-1/2}y + \frac{1}{2}(xy)^{-1/2}\left(x\frac{dy}{dx}\right) = 0$