$$\frac{d}{dx}\frac{d}{dx}x^2(\ln x) =$$

$$= \frac{d}{dx}\frac{d}{dx}(\ln x)x^2 =$$

$$= \frac{d}{dx}\left((\ln x)\left(\frac{d}{dx}x^2\right) + \left(\frac{d}{dx}\ln x\right)x^2\right) =$$

$$= \frac{d}{dx}\left((\ln x)\left(\frac{d}{dx}x\right)\cdot 2x^1 + \left(\frac{d}{dx}\ln x\right)x^2\right) =$$

$$= \frac{d}{dx}\left((\ln x)\cdot 1\cdot 2x^1 + \left(\frac{d}{dx}\ln x\right)x^2\right) =$$

$$= \frac{d}{dx}\left((\ln x)\cdot 1\cdot 2x + \left(\frac{d}{dx}\ln x\right)x^2\right) =$$

$$= \frac{d}{dx}\left((\ln x)\cdot 1x\cdot 2 + \left(\frac{d}{dx}\ln x\right)x^2\right) =$$

$$= \frac{d}{dx}\left((\ln x)x\cdot 2\cdot 1 + \left(\frac{d}{dx}\ln x\right)x^2\right) =$$

$$= \frac{d}{dx}\left((\ln x)x\cdot 2 + \left(\frac{d}{dx}\ln x\right)x^2\right) =$$

$$= \frac{d}{dx}\left((\ln x)x\cdot 2 + \left(\frac{d}{dx}x\right)\cdot\left(\frac{1}{x}\right)x^2\right) =$$

$$= \frac{d}{dx}\left((\ln x)x\cdot 2 + 1\cdot\left(\frac{1}{x}\right)x^2\right) =$$

$$= \frac{d}{dx}\left((\ln x)x\cdot 2 + 1\cdot\left(\frac{1x^2}{x}\right)\right) =$$

$$= \frac{d}{dx}\left((\ln x)x\cdot 2 + 1\left(\frac{x^2\cdot 1}{x}\right)\right) =$$

$$= \frac{d}{dx}\left((\ln x)x\cdot 2 + 1\left(\frac{x^2}{x}\right)\right) =$$

$$= \frac{d}{dx}\left((\ln x)x\cdot 2 + 1\cdot\left(\frac{1^2x^{(2-1\cdot 1)}}{1x^{(1-1\cdot 1)}}\right)\right) =$$

$$= \frac{d}{dx}\left((\ln x)x\cdot 2 + 1\cdot\left(\frac{1x^{(2-1\cdot 1)}}{1x^{(1-1\cdot 1)}}\right)\right) =$$

$$= \frac{d}{dx}\left((\ln x)x{\cdot}2 + 1{\cdot}\left(\frac{1x^{(2-1)}}{1x^{(1-1\cdot 1)}}\right)\right) =$$

$$= \frac{d}{dx}\left((\ln x)x{\cdot}2 + 1{\cdot}\left(\frac{1x^{(-1+2)}}{1x^{(1-1\cdot 1)}}\right)\right) =$$

$$= \frac{d}{dx}\left((\ln x)x{\cdot}2 + 1{\cdot}\left(\frac{1x}{1x^{(1-1\cdot 1)}}\right)\right) =$$

$$= \frac{d}{dx}\left((\ln x)x{\cdot}2 + 1\left(\frac{x{\cdot}1}{1x^{(1-1\cdot 1)}}\right)\right) =$$

$$= \frac{d}{dx}\left((\ln x)x{\cdot}2 + 1\left(\frac{x}{1x^{(1-1\cdot 1)}}\right)\right) =$$

$$= \frac{d}{dx}\left((\ln x)x{\cdot}2 + 1\left(\frac{x}{1x^{(1-1)}}\right)\right) =$$

$$= \frac{d}{dx}\left((\ln x)x{\cdot}2 + 1\left(\frac{x}{1x^{(-1+1)}}\right)\right) =$$

$$= \frac{d}{dx}\left((\ln x)x{\cdot}2 + 1\left(\frac{x}{1x^{(-0)}}\right)\right) =$$

$$= \frac{d}{dx}((\ln x)x{\cdot}2 + 1x) =$$

$$= \frac{d}{dx}((\ln x)x{\cdot}2 + x{\cdot}1) =$$

$$= \frac{d}{dx}((\ln x)x{\cdot}2 + x) =$$

$$= \frac{d}{dx}x^{(1\cdot 1)}\left((\ln x){\cdot}1{\cdot}2x^{(1-1\cdot 1)} + 1x^{(1-1\cdot 1)}\right) =$$

$$= \frac{d}{dx}x\left((\ln x){\cdot}1{\cdot}2x^{(1-1\cdot 1)} + 1x^{(1-1\cdot 1)}\right) =$$

$$= \frac{d}{dx}x\left((\ln x){\cdot}2{\cdot}1x^{(1-1\cdot 1)} + 1x^{(1-1\cdot 1)}\right) =$$

$$= \frac{d}{dx}x\left((\ln x){\cdot}2{\cdot}1x^{(1-1)} + 1x^{(1-1\cdot 1)}\right) =$$

$$= \frac{d}{dx}x\left((\ln x){\cdot}2{\cdot}1x^{(-1+1)} + 1x^{(1-1\cdot 1)}\right) =$$

$$= \frac{d}{dx}x\left((\ln x){\cdot}2{\cdot}1x^{(-0)} + 1x^{(1-1\cdot 1)}\right) =$$

$$= \frac{d}{dx}x\left((\ln x){\cdot}2 + 1x^{(1-1\cdot 1)}\right) =$$

$$= \frac{d}{dx}x\left((\ln x)\cdot 2 + 1x^{(1-1)}\right) =$$
$$= \frac{d}{dx}x\left((\ln x)\cdot 2 + 1x^{(-1+1)}\right) =$$
$$= \frac{d}{dx}x\left((\ln x)\cdot 2 + 1x^{(-0)}\right) =$$
$$= \frac{d}{dx}x((\ln x)\cdot 2 + 1) =$$
$$= \frac{d}{dx}((\ln x)\cdot 2 + 1)x =$$
$$= ((\ln x)\cdot 2 + 1)\left(\frac{d}{dx}x\right) + \left(\frac{d}{dx}((\ln x)\cdot 2 + 1)\right)x =$$
$$= (\ln x)\cdot 2 + 1 + \left(\frac{d}{dx}((\ln x)\cdot 2 + 1)\right)x =$$
$$= (\ln x)\cdot 2 + 1 + \left(\frac{d}{dx}(\ln x)\cdot 2 + \frac{d}{dx}1\right)x =$$
$$= (\ln x)\cdot 2 + 1 + \left(2\left(\frac{d}{dx}\ln x\right) + \frac{d}{dx}1\right)x =$$
$$= (\ln x)\cdot 2 + 1 + \left(2\left(\frac{d}{dx}x\right)\cdot\left(\frac{1}{x}\right) + \frac{d}{dx}1\right)x =$$
$$= (\ln x)\cdot 2 + 1 + \left(2\cdot 1\cdot\left(\frac{1}{x}\right) + \frac{d}{dx}1\right)x =$$
$$= (\ln x)\cdot 2 + 1 + \left(2\cdot\left(\frac{1\cdot 1}{x}\right) + \frac{d}{dx}1\right)x =$$
$$= (\ln x)\cdot 2 + 1 + \left(2\cdot\left(\frac{1}{x}\right) + \frac{d}{dx}1\right)x =$$
$$= (\ln x)\cdot 2 + 1 + \left(\frac{2\cdot 1}{x} + \frac{d}{dx}1\right)x =$$
$$= (\ln x)\cdot 2 + 1 + \left(\frac{2}{x} + \frac{d}{dx}1\right)x =$$
$$= (\ln x)\cdot 2 + 1 + \left(\frac{2}{x}\right)x =$$
$$= (\ln x)\cdot 2 + 1 + \frac{2x}{x} =$$

$$= (\ln x)\cdot 2 + 1 + \frac{x\cdot 2}{x} =$$
$$= (\ln x)\cdot 2 + 1 + \frac{1\cdot 2x^{(1-1\cdot 1)}}{1x^{(1-1\cdot 1)}} =$$
$$= (\ln x)\cdot 2 + 1 + \frac{2\cdot 1x^{(1-1\cdot 1)}}{1x^{(1-1\cdot 1)}} =$$
$$= (\ln x)\cdot 2 + 1 + \frac{2\cdot 1x^{(1-1)}}{1x^{(1-1\cdot 1)}} =$$
$$= (\ln x)\cdot 2 + 1 + \frac{2\cdot 1x^{(-1+1)}}{1x^{(1-1\cdot 1)}} =$$
$$= (\ln x)\cdot 2 + 1 + \frac{2\cdot 1x^{(-0)}}{1x^{(1-1\cdot 1)}} =$$
$$= (\ln x)\cdot 2 + 1 + \frac{2}{1x^{(1-1\cdot 1)}} =$$
$$= (\ln x)\cdot 2 + 1 + \frac{2}{1x^{(1-1)}} =$$
$$= (\ln x)\cdot 2 + 1 + \frac{2}{1x^{(-1+1)}} =$$
$$= (\ln x)\cdot 2 + 1 + \frac{2}{1x^{(-0)}} =$$
$$= (\ln x)\cdot 2 + 1 + 2 =$$
$$= (\ln x)\cdot 2 + 2 + 1 =$$
$$= (\ln x)\cdot 2 + 3$$