

$$14. \int \frac{1}{x \ln x} dx = \int \frac{\left(\frac{1}{x}\right)}{\ln x} dx = \int \frac{u' dx}{u}$$

$$= \boxed{\ln(|\ln x|) + C}$$

$$15. \int \frac{6u-3}{4u^2-4u+1} dx = 3 \int \frac{2u-1}{4u^2-4u+1} dx$$

$$u' = 8u-4 = \underline{4(2u-1)}$$

$$= 3 \cdot \frac{1}{4} \int \frac{4(2u-1)}{4u^2-4u+1} du$$

$$= \boxed{\frac{3}{4} \ln |4u^2-4u+1| + C}$$

$$16. \int \frac{\ln x^2}{x} dx = \int 2 \frac{\ln x}{x} dx = 2 \int \frac{1}{x} (\ln x)' dx$$

$$= 2 \frac{(\ln x)^2}{2} = \boxed{(\ln x)^2 + C}$$

$$17. \int \frac{e^{\sqrt{x}}}{\sqrt{x}} dx = \int \frac{1}{x^{1/2}} e^{x^{1/2}} dx \Big/ \frac{d}{dx} x^{1/2} = \frac{1}{2} \cdot x^{-1/2} = \frac{1}{2x^{1/2}}$$

$$= 2 \int \frac{1}{2x^{1/2}} e^{x^{1/2}} dx = 2 e^{x^{1/2}} + C$$

$$= \boxed{2 e^{\sqrt{x}} + C}$$