For each problem, do you think you should do a u-substitution or integration by parts? Whichever choice you make, examine the new antiderivative problem and ask yourself "Is this new antiderivative not worse than the one I started?" Then ask yourself what you think you'd do to tackle the new antiderivative problem.

(1) $\displaystyle\int x^2 \ln(x)\ dx$

(2) $\displaystyle\int \frac{t+2}{\sqrt{t^2+4t}}\ dt$

(3) $\displaystyle\int x\sin(x)\ dx$

(4) $\displaystyle\int x^{-2}e^{\frac{1}{x}}\ dx$

(5) $\displaystyle\int \frac{\sin(\theta)}{1+\cos^2(\theta)}\ d\theta$

(6) $\displaystyle\int \arctan(x)\ dx$

(7) $\displaystyle\int e^{\sec(t)}\frac{\sin(t)}{\cos^2(t)}\ dt$

(8) $\displaystyle\int \sin(x)e^x\ dx$

(9) $\displaystyle\int \ln(\sqrt[3]{t})\ dt$

(10) $\displaystyle\int \frac{\sqrt{1+\ln(x)}}{x}\ dx$