These are things you should know immediately

1. $\int e^{3x}\,dx$
2. $\int \cos(5x)\,dx$
3. $\int \sec^2 x\,dx$
4. $\int \sec x \tan x\,dx$
5. $\int \dfrac{1}{3x+1}\,dx$ Let $u = 3x+1$
6. $\int \tan x\,dx = \int \dfrac{\sin x}{\cos x}\,dx$ Now let $u = \cos x$.
7. $\int \dfrac{1}{1+x^2}\,dx$
8. $\int \dfrac{1}{\sqrt{1-x^2}}\,dx$
9. $\int \tan^{-1} x\,dx$ Let $f = \tan^{-1} x$ and $g' = 1$.
10. $\int \ln x\,dx$ Let $f = \ln x$ and $g' = 1$.
11. $\int x^3 e^{5x}\,dx$ Let $f = x^3$ and $g' = e^{5x}$.
12. $\int x^3 \sin x\,dx$ Let $f = x^3$ and $g' = e^{5x}$.
13. $\int \dfrac{1}{9+x^2}\,dx$ Either write $x = 3\tan\theta$ or factor 9 out of bottom.
14. $\int \dfrac{1}{\sqrt{9-x^2}}\,dx$ Either write $x = 3\sin\theta$ or write bottom as $\sqrt{9(1-(x/3)^2)} = 3\sqrt{1-(x/3)^2}$.