$$\frac{-1}{25}\,\frac{u^{\frac{4}{3}}}{\frac{4}{3}}+c=\frac{-3}{100}\,u^{\frac{4}{3}}+c=\frac{-3}{100}\left(3-5x^{5}\right)^{\frac{4}{3}}+c$$

5) $$\int e^{2x}\sqrt{1+e^{2x}}\,dx=\frac{1}{2}\int 2e^{2x}\left(1+e^{2x}\right)^{\frac{1}{2}}dx$$

$$=\frac{1}{2}\,\frac{\left(1+e^{2x}\right)^{3/2}}{3/2}+c=\frac{1}{3}\left(1+e^{2x}\right)^{\frac{3}{2}}+c$$

6) $$\int\frac{\sin^{-1}(3x)}{\sqrt{1-9x^{2}}}\,dx=\int\frac{\left[\sin^{-1}(3x)\right]^{1}}{\sqrt{1-(3x)^{2}}}\,dx=\frac{1}{3}\int\frac{3\,\sin^{-1}(3x)}{\sqrt{1-(3x)^{2}}}\,dx$$

$$=\frac{1}{3}\,\frac{\left[\sin^{-1}(3x)\right]^{2}}{2}+c=\frac{1}{6}\left[\sin^{-1}(3x)\right]^{2}+c$$

7) $$\int\cos(5x)\,dx=\frac{1}{5}\int 5\cos(5x)\,dx=\frac{1}{5}\sin(5x)+c$$

or let $u=5x \Rightarrow du=5\,dx \Rightarrow \frac{du}{5}=dx$

$$\therefore \int\cos(5x)\,dx=\int\cos u\,\frac{du}{5}=\frac{1}{5}\int\cos u\,du$$

$$=\frac{1}{5}\sin u+c=\frac{1}{5}\sin(5x)+c$$

8) $$\int\frac{\cos\sqrt{x}}{\sqrt{x}}\,dx=2\int\frac{\cos\sqrt{x}}{2\sqrt{x}}\,dx=2\sin\sqrt{x}+c$$

9) $$\int\sin(2x+9)\,dx=\frac{1}{2}\int 2\sin(2x+9)\,dx=\frac{-1}{2}\cos(2x+9)+c$$

10) $$\int\sin(\sin x)\cos x\,dx=-\cos(\sin x)+c$$

or let $u=\sin x \Rightarrow du=\cos x\,dx$

$$\therefore \int\sin(\sin x)\cos x\,dx=\int\sin u\,du=-\cos u+c$$
$$=-\cos(\sin x)+c$$

11) $$\int\frac{\sin 2x}{\cos x}\,dx=\int\frac{2\sin x\,\cancel{\cos x}}{\cancel{\cos x}}\,dx=2\int\sin x\,dx$$
$$=-2\cos x+c$$