เฉลยแบบฝึกหัด 11.7

1. $\dfrac{\arctan x}{\sqrt{1+x^2}}+\dfrac{x}{\sqrt{1+x^2}}+C$

2. 2. $\dfrac{1}{4}((2x^2-1)\arcsin x+x\sqrt{1+x^2})+C$

3. $\dfrac{5}{11}\tan^{\frac{11}{5}}(\dfrac{x}{2})+C$

4. $\dfrac{1}{4}(\dfrac{1}{2}\sin^4 x-\dfrac{1}{3}\sin^6 x)+C$

5. $\sqrt{1+x^2}+C$

6. $-\dfrac{\ln x}{6(3x^2-2)}-\dfrac{1}{24}\ln\left|3x^2-2\right|+\dfrac{1}{12}\ln|x|+C$

7. $x\arccos(\sqrt{\dfrac{x}{x-1}})+\sqrt{x}-\arctan\sqrt{x}+C$

8. $x\arctan(1+\sqrt{x})-\sqrt{x}-\arctan\sqrt{x}+C$

9. $\dfrac{x^3}{2}\ln(1+x^3)-\dfrac{3}{2}(\dfrac{x^2}{2}-x+\ln\left|x+1\right|-\dfrac{1}{2}\ln\left|x^2-x+1\right|+\dfrac{1}{\sqrt{3}}\arctan(\dfrac{2x+1}{\sqrt{3}}))+C$

10. $(2-x)\sqrt{4-e^{2x}}-2x+2\ln\left|1-\sqrt{4-e^{2x}}\right|+C$

11. $\dfrac{1}{2}(x-\ln(1+e^x)+\dfrac{1}{1+e^x}-\dfrac{x}{(1+e^x)^2})+C$

12. $\dfrac{-\ln x}{x+1}+\ln\left|\dfrac{x}{x+1}\right|+C$

13. $\dfrac{1}{2x}(\sqrt{1-x^2}-\dfrac{\arccos x}{x})+C$

14. $-\arctan(\cos(2x))+C$

15. $\dfrac{x^3}{3}\ln(x+\sqrt{1+x^2})-\dfrac{1}{9}(1+x^2)^{\frac{3}{2}}+\dfrac{1}{3}\sqrt{1+x^2}+C$

16. $e^x \tan(\frac{x}{2}) + C$

17. $\frac{e^{\arctan x}(2x^2 + 2x + 3)}{5(1 + x^2)} + C$

18. $-2\operatorname{cosec}^2(\frac{x}{2}) + \ln\left|\frac{\operatorname{cosec}(\frac{x}{2}) + 1}{\operatorname{cosec}(\frac{x}{2}) - 1}\right| + C$

19. $\frac{5}{24}\ln\left|\tan\frac{x}{2} + 2\right| - \frac{5}{26}\ln\left|\tan\frac{x}{2} - 2\right| - \frac{5}{81}\ln\left|\tan^2\frac{x}{2}\tan\frac{x}{2} + 1\right| + \frac{1}{14\sqrt{3}}\arctan(\frac{2\tan\frac{x}{2} + 1}{\sqrt{3}}) + C$

20. $\frac{1}{5\sqrt{2}}(3 + \cos(2x))^{\frac{3}{2}}(2 - \cos(2x)) + C$