1. $(1 \quad \times 21)$

(1) $f = 10$ $f' =$

(2) $f = x^5$ $f' =$

(3) $f = \sqrt[3]{x}$ $f' =$

(4) $f = \dfrac{1}{x^3}$ $f' =$

(5) $f = x^\pi$ $f' =$

(6) $f = \log x$ $f' =$

(7) $f = \log_2 x$ $f' =$

(8) $f = e^x$ $f' =$

(9) $f = 2^x$ $f' =$

(10) $f = \sin x$ $f' =$

(11) $f = \cos x$ $f' =$

(12) $f = \tan x$ $f' =$

(13) $f = \mathrm{Sin}^{-1} x$ $f' =$

(14) $f = \mathrm{Cos}^{-1} x$ $f' =$

(15) $f = \mathrm{Tan}^{-1} x$ $f' =$

(16) $f = \sinh x$ $f' =$

(17) $f = \cosh x$ $f' =$

(18) $f = \tanh x$ $f' =$

(19) $f = \sinh^{-1} x$ $f' =$

(20) $f = \mathrm{Cosh}^{-1} x$ $f' =$

(21) $f = \tanh^{-1} x$ $f' =$

2. $(1 \quad \times 19)$

(1) $\displaystyle\int dx =$

(2) $\displaystyle\int x^8\,dx =$

(3) $\displaystyle\int \sqrt{x}\,dx =$

(4) $\displaystyle\int \frac{dx}{x} =$

(5) $\displaystyle\int \frac{dx}{x^3} =$

(6) $\displaystyle\int \frac{dx}{x^\pi} =$

(7) $\displaystyle\int e^x\,dx =$

(8) $\displaystyle\int 2^x\,dx =$

(9) $\displaystyle\int \sin x\,dx =$

(10) $\displaystyle\int \cos x\,dx =$

(11) $\displaystyle\int \frac{dx}{\cos^2 x} =$

(12) $\displaystyle\int \frac{dx}{\sqrt{1-x^2}} =$

(13) $\displaystyle\int \frac{dx}{1+x^2} =$

(14) $\displaystyle\int \sinh x\,dx =$

(15) $\displaystyle\int \cosh x\,dx =$

(16) $\displaystyle\int \frac{dx}{\cosh^2 x} =$

(17) $\displaystyle\int \frac{dx}{\sqrt{x^2+1}} =$

(18) $\displaystyle\int \frac{dx}{\sqrt{x^2-1}} =$

(19) $\displaystyle\int \frac{dx}{1-x^2} =$

3.

x

(5 　× 4)

(1) e^x　(2) $\cos x$　(3) $\log(1+x)$　(4) $\dfrac{1}{1-x}$

4.

(1) $\displaystyle\int \frac{x+2}{\sqrt{1-2x^2}}\,dx$　(10　)

(2) $\displaystyle\int_{-\infty}^{\infty} \frac{dx}{1+x^2}$　(10　)

(3) $\displaystyle\int_{1}^{\sqrt{2}} \frac{dx}{x^3(x^2+1)}$　(20　)