

## เฉลยแบบฝึกหัด 9.1

จงหาปริพันธ์ต่อไปนี้โดยการแทนค่า

1. 
$$\int \frac{7x}{x^2 - 4} dx = \frac{7}{2} \ln(x^2 - 4) + c$$

2. 
$$\int x^2 e^{x^3} dx = \frac{e^{x^3}}{3} + c$$

3. 
$$\int \frac{x^2 + 2}{x^3 + 6x} dx = \frac{1}{3} \ln(x^3 + 6x) + c$$

4. 
$$\int \frac{\ln^2 x}{x} dx = \frac{\ln^3 x}{3} + c$$

5. 
$$\int x^2 \sqrt{x^3 + 1} dx = \frac{2}{9} (x^3 + 1)^{\frac{3}{2}} + c$$

6. 
$$\int \frac{\sinh \sqrt{x}}{\sqrt{x}} dx = 2 \cosh \sqrt{x} + c$$

7. 
$$\int \frac{5}{(1 - 2x)^3} dx = \frac{5}{4} (1 - 2x)^{-2} + c$$

8. 
$$\int \sqrt{x} \cosh(1 + x^{\frac{3}{2}}) dx = -\frac{2}{3} \sinh(1 + x^{\frac{3}{2}}) + c$$

9. 
$$\int \frac{1 + 3x}{\sqrt{3x^2 + 2x + 1}} dx = \sqrt{3x^2 + 2x + 1} + c$$

10. 
$$\int \sqrt[3]{x^3 + 1} x^5 dx = \frac{1}{7} (x^3 + 1)^{\frac{7}{3}} - \frac{1}{4} (x^3 + 1)^{\frac{4}{3}} + c$$

11. 
$$\int \frac{e^x}{e^x + 1} dx = \ln(e^x + 1) + c$$

12. 
$$\int \frac{x}{\sqrt[4]{x+2}} dx = \frac{4}{7} (x+2)^{\frac{7}{4}} - \frac{8}{3} (x+2)^{\frac{3}{4}} + c$$

13. 
$$\int \frac{t^2}{\sqrt[3]{1+t^3}} dx = \frac{(1+t^3)^{\frac{2}{3}}}{2} + c$$

14. 
$$\int \frac{t^2}{\sqrt{1-t}} dt = -(2(1-t)^{\frac{1}{2}} - \frac{4}{3}(1-t)^{\frac{3}{2}} + \frac{2}{5}(1-t)^{\frac{5}{2}}) + c$$

15. 
$$\int_0^2 (x-1)^{25} dx = \frac{1}{26} - \frac{1}{26} = 0$$

$$16. \int_1^2 x\sqrt{x-1} \, dx = \frac{16}{15}$$

$$17. \int_0^2 \frac{1}{(2x-3)^2} \, dx = -\frac{2}{3}$$

$$18. \int_0^{13} \frac{dx}{\sqrt[3]{(1+2x)^2}} = 3$$

$$19. \int_0^4 \frac{x}{\sqrt{1+2x}} \, dx = \frac{10}{3}$$

$$20. \int_e^{e^2} \frac{1}{x \ln \sqrt{x}} \, dx = 2 \ln 2$$