Name: _____   Date: _____

1. Find the indefinite integral.

$$\int 8(x-5)^7 \, dx$$

2. Find the indefinite integral.

$$\int \frac{2}{(r-1)^4} \, dr$$

3. Find the indefinite integral.

$$\int \left[r - \frac{2}{(r-5)^8} \right] dr$$

4. Find the indefinite integral.

$$\int \frac{z^2}{z+7} \, dz$$

5. Find the indefinite integral.

$$\int \frac{6y}{y+3} \, dy$$

6. Find the indefinite integral.

$$\int \frac{\cot\left(12/w^2\right)}{w^3}\,dw$$

7. Find the definite integral.

$$\int_0^{15} \frac{4x}{\sqrt{x^2+64}}\,dx$$

8. Find the definite integral.

$$\int_0^2 x^3 e^{-x^4}\,dx$$

9. Find the indefinite integral.

$$\int x^3 e^{6x^2}\,dx$$

10. Find the indefinite integral.

$$\int \frac{8x^2}{e^x}\,dx$$

11. Find the indefinite integral.

$$\int x^3 \ln x\,dx$$

12. Find the indefinite integral.

$$\int \frac{3(\ln x)^2}{x^2}\,dx$$

13. Find the indefinite integral.

$$\int u \ln(u+6)\,du$$

14. Find the indefinite integral.

$$\int \frac{\ln q}{2q^3}\,dq$$

15. Find the indefinite integral.

$$\int v\sqrt{2v-9}\,dv$$

16. Find the indefinite integral.

$$\int \frac{t}{\sqrt{1+3t}}\,dt$$

17. Find the indefinite integral.

$$\int e^{-7n}\sin 5n\,dn$$

18. Find the indefinite integral.

$$\int e^{9u} \cos 6u \, du$$

19. Find the definite integral.

$$\int_0^{\pi/5} x \cos 5x \, dx$$

20. Find the definite integral.

$$\int_1^3 x^3 \ln x \, dx$$

21. Find the indefinite integral.

$$\int \cos x \sin^4 x \, dx$$

22. Find the indefinite integral.

$$\int \sin x \cos^3 x \, dx$$

23. Find the indefinite integral.

$$\int \sin^3 4x \cos^4 4x \, dx$$

24. Find the indefinite integral.

$$\int \cos^3 4x \sin^2 4x \, dx$$

25. Find the indefinite integral.

$$\int \cos^3 2x \, dx$$

26. Find the indefinite integral.

$$\int \cos^4 5x \, dx$$

27. Find the indefinite integral.

$$\int \sin^3 \frac{x}{5} \, dx$$

28. Find the indefinite integral.

$$\int \sin^2 2x \, dx$$

29. Find the indefinite integral.

$$\int \sin^3 2\theta \sqrt{\cos 2\theta} \, d\theta$$

30. Find the indefinite integral.

$$\int \frac{\cos^3 \theta}{\sqrt{\sin \theta}} \, d\theta$$

31. Find the indefinite integral.

$$\int \tan^3 7x \, dx$$

32. Find the indefinite integral.

$$\int \tan^5 \left(\frac{x}{11} \right) dx$$

33. Find the indefinite integral.

$$\int \sec^4 2x \, dx$$

34. Find the indefinite integral.

$$\int \sec^6 4x \, dx$$

35. Find the indefinite integral.

$$\int \tan^3 \left(\frac{\pi x}{7} \right) \sec^2 \left(\frac{\pi x}{7} \right) dx$$

36. Find the indefinite integral.

$$\int \sec^5 3x \tan 3x \, dx$$

37. Find the arc length of the graph of the function $y = \dfrac{2}{3}x^{\frac{3}{2}} + 2$ over the interval $[0,12]$.

38. Find the arc length of the graph of the function $y = 18x^{\frac{3}{2}} + 6$ over the interval $[0,7]$.

39. Find the arc length of the graph of the function $y = \dfrac{3}{2}x^{\frac{2}{3}} + 10$ over the interval $[1,512]$.

40. Find the arc length of the graph of the function $y = \dfrac{x^8}{16} + \dfrac{1}{12x^6}$ over the interval $[1,2]$.

41. Find the arc length of the graph of the function $x = \dfrac{1}{3}\left(y^2 + 2\right)^{\frac{3}{2}}$ over the interval $0 \le y \le 14$.

42. Find the arc length of the graph of the function $x = \frac{1}{3}(y-3)\sqrt{y}$ over the interval $1 \le y \le 9$.