

Instructions: On separate paper, find each of the following indefinite integrals. Your work should be neat, organized, and easy to follow.

1. $\int (2x+5)(x^2+5x)^7 dx$

2. $\int (3-x)^{10} dx$

3. $\int \sqrt{7x+9} dx$

4. $\int \frac{x^3}{(1+x^4)^{1/3}} dx$

5. $\int e^{5x+2} dx$

6. $\int 4\cos(3x) dx$

7. $\int \frac{\sin(\ln x)}{x} dx$

8. $\int \frac{3x+6}{x^2+4x-3} dx$

9. $\int 5\sec 4x \tan 4x dx$

10. $\int \frac{3}{x \ln x} dx$

11. $\int \frac{\cos(5x)}{e^{\sin(5x)}} dx$

12. $\int x\sqrt{4-x} dx$

13. $\int (x+3)(x-1)^5 dx$

14. $\int \frac{x+5}{2x+3} dx$

15. $\int \frac{x^2+4}{x+2} dx$

16. $\int \frac{\cos^2 x}{1+\sin x} dx$

17. $\int \tan 5x dx$

18. $\int (2+\tan x)^2 dx$

19. $\int \frac{\cos 5x}{3+\sin 5x} dx$

20. $\int (\csc 3x + \cot 3x)^2 dx$

21. $\int (\sec^2 x)\sqrt{5+\tan x} dx$

22. $\int (\sin x - \cos x)(\sin x + \cos x)^5 dx$

Solutions to Integration Fun Worksheet

1. $\frac{(x^2 + 5x)^8}{8} + c$

2. $-\frac{(3-x)^{11}}{11} + c$

3. $\frac{2(7x+9)^{\frac{3}{2}}}{21} + c$

4. $\frac{3(1+x^4)^{\frac{2}{3}}}{8} + c$

5. $\frac{e^{5x+2}}{5} + c$

6. $\frac{4}{3}\sin 3x + c$

7. $-\cos(\ln x) + c$

8. $\frac{3}{2}\ln|x^2 + 4x - 3| + c$

9. $\frac{5}{4}\sec 4x + c$

10. $3\ln|\ln x| + c$

11. $\frac{-1}{5e^{\sin 5x}} + c$

12. $-\frac{8}{3}(4-x)^{\frac{3}{2}} + \frac{2}{5}(4-x)^{\frac{5}{2}} + c$

13. $\frac{(x-1)^7}{7} + \frac{2}{3}(x-1)^6 + c$

14. $\frac{2x+3}{4} + \frac{7}{4}\ln|2x+3| + c$

15. $\frac{(x+2)^2}{2} - 4(x+2) + 8\ln|x+2| + c$

16. $x + \cos x + c$

17. $\frac{\ln|\sec 5x|}{5} + c$

18. $3x + 4\ln|\sec x| + \tan x + c$

19. $\frac{1}{5}\ln|3 + \sin 5x| + c$

20.

$-\frac{2 \cot 3x}{3} - \frac{2 \csc 3x}{3} - x + c$

21. $\frac{2}{3}(5 + \tan x)^{\frac{3}{2}} + c$

22.

$-\frac{(\sin x + \cos x)^6}{6} + c$