

Review – Integration by Substitution
AB Calculus (Oberle)

1. $\int (3-2x)^3 dx$

2. $\int \sqrt{4+9x} dx$

3. $\int x \sec^2(x^2) dx$

4. $\int 4x \tan(x^2) dx$

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

6. $\int \frac{1}{4+9x^2} dx$

(hint: factor out a 4 from the denominator)

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

8. $\int e^{\cot x} \csc^2(x) dx$

9. $\int \frac{x}{\sqrt{1-x^4}} dx$

10. $\int \cos^5(7x) \sin(7x) dx$

11. $\int x\sqrt{5-x} dx$

12. $\int \frac{e^{\tan^{-1} x}}{1+x^2} dx$

13. $\int \frac{e^{\sqrt{x-2}}}{\sqrt{x-2}} dx$

14. $\int \frac{dx}{x \ln x}$

15. $\int (3x+1) \tan(3x^2+2x) dx$

16. $\int \sec(\sin \theta) \tan(\sin \theta) \cos \theta d\theta$

17. $\int \frac{e^{-x}}{4+e^{-2x}} dx$

18. $\int \frac{\cos(\ln x)}{x} dx$

19. $\int \frac{e^x}{\sqrt{1-e^{2x}}} dx$

20. $\int \frac{x}{\sec(x^2)} dx$

21. $\int x4^{-x^2} dx$

22. $\int 2^{\pi x} dx$

23. $\int \frac{dx}{\sqrt{x} 3^{\sqrt{x}}}$