

Review for Test over Integration Methods
(Parts/Improper/Partial Fractions)

Name _____

1. $\int x \sin(4x) dx$

6. $\int_0^1 x e^{-x} dx$

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

7. $\int_1^4 \sqrt{x} \ln x dx$

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

8. $\int_{\frac{\pi}{4}}^{\frac{\pi}{2}} x \csc^2 x dx$

4. $\int \sin^{-1} x dx$

9. $\int_1^2 \frac{\ln x}{x^2} dx$

5. $\int x^2 \cos(3x) dx$

10. $\int \frac{x-39}{x^2-x-12} dx$

12. $\int \frac{x^2+2x}{x^3-x^2+x-1} dx$

11. $\int \frac{4x-2}{3(x-1)^2} dx$

13. $\int \frac{x^2-x+9}{(x^2+9)^2} dx$

14. $\int_1^{\infty} \frac{1}{(3x+1)^2} dx$

17. $\int_{-\infty}^{\infty} x e^{-x^2} dx$

15. $\int_{-\infty}^0 \frac{1}{2x-5} dx$

18. $\int_1^9 \frac{1}{\sqrt[3]{x-9}} dx$

16. $\int_{-\infty}^{\infty} x^3 dx$

19. $\int_{-2}^3 \frac{1}{x^4} dx$

Use the comparison test to say whether the integral converges or diverges

20. $\int_1^{\infty} \frac{1}{x^2+5} dx$

21. $\int_3^{\infty} \frac{\ln x}{x} dx$