

So Many Integration Techniques ... Which to Use? – Class Handout

Cut out each of the following integrals and integral techniques. Spread the integral techniques out across your desk.

For each of the integrals, determine which integration technique you would use to find the antiderivative and place the integral next to that technique.

You do not need to evaluate any of the integrals; simply determine which integration technique applies.

#1: $\int \frac{-5}{x^2 + 1} dx$	#2: $\int 4xe^x dx$	#3: $\int \frac{x^2 + 2x - 5}{x - 3} dx$
#4: $\int \sin^2 x \cos^5 x dx$	#5: $\int \frac{2}{x^2 - 3x} dx$	#6: $\int \frac{x + 2}{\sqrt{x^2 + 4x - 5}} dx$
#7: $\int \frac{6}{\sqrt{4 - x^2}} dx$	#8: $\int 3x \cos(x^2) dx$	#9: $\int \sin^3 x \cos^4 x dx$
#10: $\int \frac{1}{x^2 - 6x + 11} dx$	#11: $\int \frac{2x}{(3x - 1)(-x + 2)} dx$	#12: $\int \frac{e^{1/x}}{x^2} dx$
#13: $\int 3x \cos x dx$	#14: $\int \frac{x^3 - 1}{x + 1} dx$	#15: $\int \tan^4 x dx$
#16: $\int \frac{1}{\sqrt{x}(1 + \sqrt{x})^2} dx$	#17: $\int e^{2x} \sin x dx$	#18: $\int \frac{2x^3 - 5x}{(x^2 - 6)^2} dx$
Substitution	Integration by Parts	Trigonometric Powers & Products
Partial Fraction Decomposition	Inverse Trig Function	Polynomial Long Division First