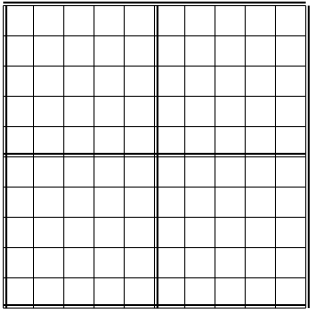


In 6-9, find the given integrals.		Name:
6.	a) $\int 3z^{3/2} dz.$	b) $\int (x^2 - 1)^2 dx.$
	Ans: _____.	Ans: _____.
7.	a) $\int_0^2 5t\sqrt{4-t^2} dt.$	b) $\int \rho \sec^2(\rho^2) d\rho.$
	Ans: _____.	Ans: _____.
8.	a) $\int_0^1 \phi e^{\phi^2} d\phi.$	b) $\int \sin^2 3x \cos 3x dx.$
	Ans: _____.	Ans: _____.
9.	a) $\int \frac{\sin(1/r)}{r^2} dr.$	b) $\frac{d}{dx} \int_1^{2x} \cos(t^4 - 1) dt$
	Ans: _____.	Ans: _____.
10.	Diver Lu Lugoínas slips and falls from a 10 m platform. a) Compute the time for Lu to hit the water?	b) How fast is Lu going as he hits the water?
	Ans: _____.	Ans: _____.

11.	Use logarithmic differentiation to find y' . a) $y = 3^{x^2}$.	b) $y = \frac{e^x \sqrt{x-3}}{x+7}$.
	Ans: _____.	Ans: _____.

12.	Use l'Hopital's rule to find the following limit: $\lim_{x \rightarrow 0} \frac{e^x - 1 - x - (x^2/2)}{x^3}$	
		Ans: _____.

13.	Find the extrema, IP's and asymptotes of $f(x) = \frac{1}{x^2 - 4}$. Graph the function.	
	Max: _____, min: _____.	IP's: _____, Asy: _____.

14.	The volume of a right circular cylinder can of soup is 16π . The surface area is to be minimized. a) Write the objective function and graph it.	b) Find the optimum dimensions.
	Ans: _____.	Ans: _____.

15.	Sand falls from a chute and forms a conical pile. The height of the cone is always twice the radius of the base. If sand is falling at $5 \text{ ft}^3/\text{s}$, how fast is the height increasing when the pile is 6 ft high?	
		Ans: _____.

		Name:
16.	Write the Riemann sum needed to compute the area in the first quadrant under $f(x) = 4x - x^2$.	Ans:_____.
17.	Find the area enclosed by $y = x$ and $y = x^3$.	Ans:_____.
18.	The region in the first quadrant bounded by $y = x^2 + 1$ and $x = 3$ is rotated about the y -axis. Find the volume.	Ans:_____.
19.	The region bounded by $y = \sqrt{x}$, $y = 1$ and $x = 0$ is revolved about the y -axis. Find the volume.	Ans:_____.
20.	Given the function $f(x) = 3x^2 + 2$ on the interval $[1, 2]$, find: a) The average value of the function.	b) The value of “ c ” of the integral MVT. Ans:_____.
	Ans:_____.	Ans:_____.