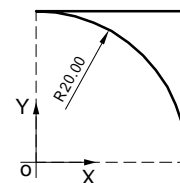
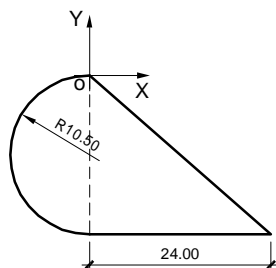
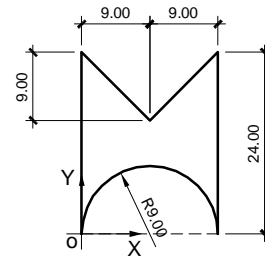
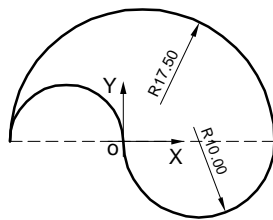
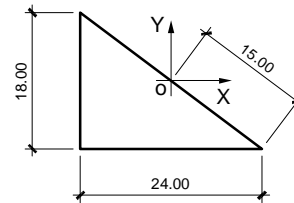
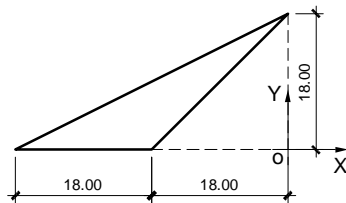
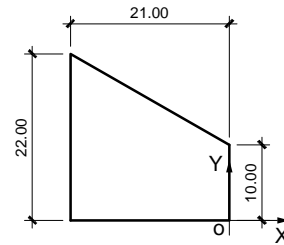
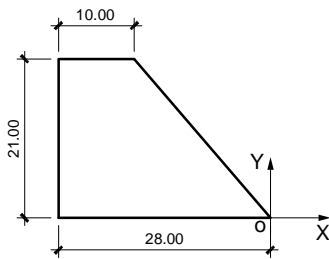


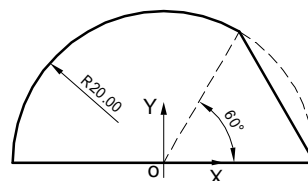
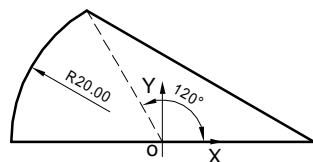
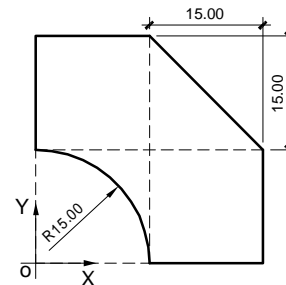
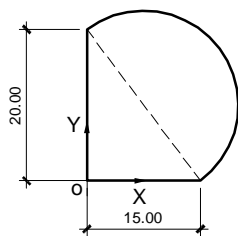
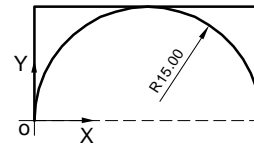
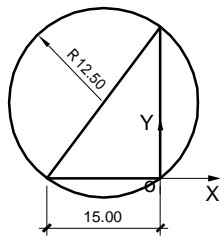
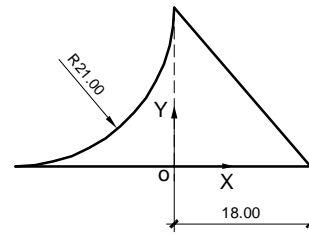
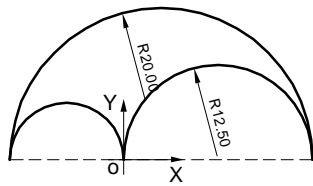
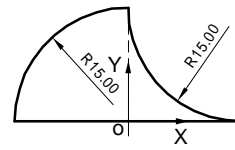
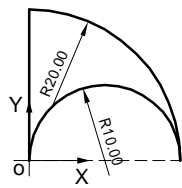
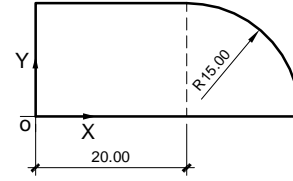
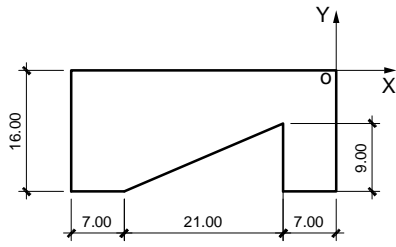


EJERCICIOS GEOMETRÍA DE LAS MASAS

Para las figuras dadas hallar:

- 1-Momentos de inercia y momento centrífugo respecto al par de ejes indicado.
- 2-Momentos de inercia y momento centrífugo respecto a los ejes baricéntricos paralelos a X y a Y.
- 3-Momentos principales de inercia baricéntricos.
- 4-Ángulos que forman los ejes principales respecto a la terna XY.
- 5-Radios de giro principales baricéntricos.







RESPUESTAS EJERCICIOS GEOMETRÍA DE LAS MASAS

		PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN					
		X_g	Y_g	Area	J_x	J_y	J_{xy}
	X_g	-17.79	Y_g	8.84	Area	399.00	
	J_x	44761.50	J_y	143458.00	J_{xy}	-68575.50	
	J_{x_g}	13566.55	J_{y_g}	17188.32	$J_{x_y_g}$	-5814.24	
	J_I	21467.15	J_{II}	9287.72	α_1°	-36.35	
	r_1	7.34	r_2	4.82	α_2°	53.65	

		PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN					
		X_g	Y_g	Area	J_x	J_y	J_{xy}
	X_g	-11.81	Y_g	8.38	Area	336.00	
	J_x	32704.00	J_y	58653.00	J_{xy}	-36603.00	
	J_{x_g}	9136.75	J_{y_g}	11769.19	$J_{x_y_g}$	-3362.63	
	J_I	14064.02	J_{II}	6841.92	α_1°	-34.31	
	r_1	6.47	r_2	4.51	α_2°	55.69	

		PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN					
		X_g	Y_g	Area	J_x	J_y	J_{xy}
	X_g	-18.00	Y_g	6.00	Area	162.00	
	J_x	8748.00	J_y	61236.00	J_{xy}	-13122.00	
	J_{x_g}	2916.00	J_{y_g}	8748.00	$J_{x_y_g}$	4374.00	
	J_I	11088.89	J_{II}	575.11	α_1°	28.15	
	r_1	8.27	r_2	1.88	α_2°	118.15	

		PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN					
		X_g	Y_g	Area	J_x	J_y	J_{xy}
	X_g	-4.00	Y_g	-3.00	Area	216.00	
	J_x	5832.00	J_y	10368.00	J_{xy}	0.00	
	J_{x_g}	3888.00	J_{y_g}	6912.00	$J_{x_y_g}$	-2592.00	
	J_I	8400.77	J_{II}	2399.23	α_1°	-29.87	
	r_1	6.24	r_2	3.33	α_2°	60.13	

		PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN					
		X_g	Y_g	Area	J_x	J_y	J_{xy}
	X_g	6.25	Y_g	4.77	Area	549.78	
	J_x	39515.35	J_y	53259.81	J_{xy}	4375.00	
	J_{x_g}	26981.89	J_{y_g}	31784.08	$J_{x_y_g}$	-12031.25	
	J_I	41651.49	J_{II}	17114.48	α_1°	-39.36	
	r_1	8.70	r_2	5.58	α_2°	50.64	

		PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN					
		X_g	Y_g	Area	J_x	J_y	J_{xy}
	X_g	9.00	Y_g	13.39	Area	223.77	
	J_x	44282.00	J_y	26119.01	J_{xy}	26973.00	
	J_{x_g}	4141.72	J_{y_g}	7994.00	$J_{x_y_g}$	0.00	
	J_I	7994.00	J_{II}	4141.72	α_1°	0.00	
	r_1	5.98	r_2	4.30	α_2°	90.00	



	PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN					
	X_g	2.93	Y_g	-12.57	Area	425.18
	J_x	79432.41	J_y	28965.28	J_{xy}	-23648.63
	J_{x_g}	12204.65	J_{y_g}	25324.10	J_{xy_g}	-8002.91
	J_I	29112.16	J_{II}	8416.59	α_1°	-25.33
	r_1	8.27	r_2	4.45	α_2°	64.67

	PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN					
	X_g	15.53	Y_g	15.53	Area	85.84
	J_x	21917.41	J_y	21917.41	J_{xy}	20000.00
	J_{x_g}	1207.22	J_{y_g}	1207.22	J_{xy_g}	-710.19
	J_I	1917.41	J_{II}	497.03	α_1°	45.00
	r_1	4.73	r_2	2.41	α_2°	135.00

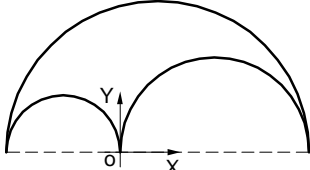
	PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN					
	X_g	-18.21	Y_g	-6.98	Area	465.50
	J_x	31390.92	J_y	207829.42	J_{xy}	60704.88
	J_{x_g}	8679.31	J_{y_g}	53458.79	J_{xy_g}	1493.35
	J_I	53508.53	J_{II}	8629.57	α_1°	1.91
	r_1	10.72	r_2	4.31	α_2°	91.91

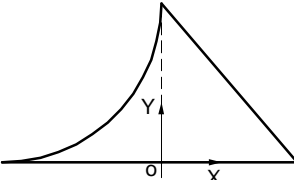
	PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN					
	X_g	16.07	Y_g	7.08	Area	476.71
	J_x	32440.20	J_y	165626.03	J_{xy}	51328.13
	J_{x_g}	8546.18	J_{y_g}	42565.50	J_{xy_g}	-2897.42
	J_I	42810.51	J_{II}	8301.17	α_1°	-4.83
	r_1	9.48	r_2	4.17	α_2°	85.17

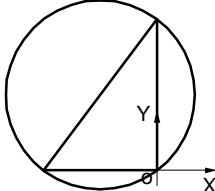
	PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN					
	X_g	6.98	Y_g	12.73	Area	157.08
	J_x	27488.94	J_y	11780.97	J_{xy}	13333.33
	J_{x_g}	2024.14	J_{y_g}	4135.60	J_{xy_g}	-619.72
	J_I	4304.05	J_{II}	1855.69	α_1°	-15.21
	r_1	5.23	r_2	3.44	α_2°	74.79

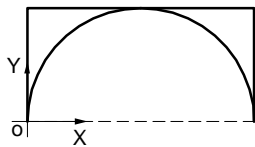
	PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN					
	X_g	-4.28	Y_g	5.72	Area	225.00
	J_x	10864.22	J_y	10864.22	J_{xy}	-6010.78
	J_{x_g}	3505.08	J_{y_g}	6740.70	J_{xy_g}	-502.11
	J_I	6816.83	J_{II}	3428.95	α_1°	-8.62
	r_1	5.50	r_2	3.90	α_2°	81.38

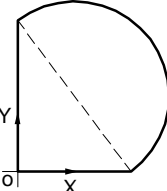


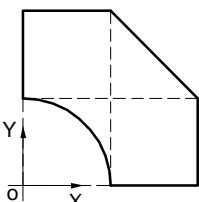
PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN						
	X_g	2.50	Y_g	12.73	Area	294.52
	J_x	52001.95	J_y	24390.29	J_{xy}	12500.00
	J_{x_g}	4255.47	J_{y_g}	22549.52	$J_{x_y_g}$	3125.00
	J_I	23068.60	J_{II}	3736.38	α_1°	9.43
	r_1	8.85	r_2	3.56	α_2°	99.43

PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN						
	X_g	2.43	Y_g	6.23	Area	283.64
	J_x	17441.22	J_y	13755.72	J_{xy}	4734.40
	J_{x_g}	6434.17	J_{y_g}	12076.83	$J_{x_y_g}$	435.60
	J_I	12110.26	J_{II}	6400.75	α_1°	4.39
	r_1	6.53	r_2	4.75	α_2°	94.39

PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN						
	X_g	-8.60	Y_g	11.47	Area	340.87
	J_x	58262.15	J_y	41161.41	J_{xy}	-33065.54
	J_{x_g}	13441.35	J_{y_g}	15949.72	$J_{x_y_g}$	550.06
	J_I	16065.04	J_{II}	13326.03	α_1°	11.84
	r_1	6.87	r_2	6.25	α_2°	101.84

PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN						
	X_g	15.00	Y_g	11.65	Area	96.57
	J_x	13869.61	J_y	35598.04	J_{xy}	16875.00
	J_{x_g}	763.94	J_{y_g}	13869.61	$J_{x_y_g}$	0.00
	J_I	13869.61	J_{II}	763.94	α_1°	0.00
	r_1	11.98	r_2	2.81	α_2°	90.00

PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN						
	X_g	9.19	Y_g	10.71	Area	395.44
	J_x	59756.07	J_y	44643.21	J_{xy}	38433.81
	J_{x_g}	14387.34	J_{y_g}	11275.95	$J_{x_y_g}$	-474.16
	J_I	14458.00	J_{II}	11205.29	α_1°	8.48
	r_1	6.05	r_2	5.32	α_2°	98.48

PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN						
	X_g	15.66	Y_g	15.66	Area	610.79
	J_x	188341.05	J_y	188341.05	J_{xy}	126562.50
	J_{x_g}	38629.87	J_{y_g}	38629.87	$J_{x_y_g}$	-23148.68
	J_I	61778.55	J_{II}	15481.19	α_1°	45.00
	r_1	10.06	r_2	5.03	α_2°	135.00



PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN						
	X_g	-4.53	Y_g	6.10	Area	382.64
	J_x	20943.95	J_y	38264.46	J_{xy}	-15000.00
	J_{x_g}	6715.49	J_{y_g}	30424.29	J_{xy_g}	-4438.11
	J_I	31227.83	J_{II}	5911.94	α_1°	-10.26
	r_1	9.03	r_2	3.93	α_2°	79.74

PROPIEDADES GEOMÉTRICAS DE LA SECCIÓN						
	X_g	-0.98	Y_g	8.44	Area	592.08
	J_x	59208.41	J_y	53434.91	J_{xy}	-5000.00
	J_{x_g}	16984.68	J_{y_g}	52871.92	J_{xy_g}	-124.42
	J_I	52872.36	J_{II}	16984.25	α_1°	-0.20
	r_1	9.45	r_2	5.36	α_2°	89.80