

Binocular Observer's Challenge:



If you came to the Table Mountain Star Party (TMSP) with your binoculars or have access to binoculars while at the TMSP this program is for you. This program will give you an opportunity to observe 30 or more showcase objects under the ideal conditions of the pristine Eden Valley skies. It's not super challenging this year, but will get progressively harder each year. You will get a button for finding just 25 of the objects on the list. All observations must be done during the TMSP.

You must find the objects yourself, without help from anyone else. Check off each object in the space provided. Enter required information and for at least three of the objects you must sketch what you see through your binoculars.

Any size binoculars can be used. All objects are within range of small to medium sized binoculars, and are available for observation between 10:00PM and 4:00AM any time during the TMSP. All objects are listed in Right Ascension order so that you can observe them before they set in the West, or as they rise in the East. To receive your button, turn in your observations to **Mark Simonson or Ron Mosher (Observation Challenge Coordinators)** any time during the TMSP. If you finish the list the last night of TMSP, and we are not available to give you your button, just mail your observations to me at 1519 Ridge Dr., Camano Island, WA. 98282, or email your observations to me at marknilse@yahoo.com, and I will see that you get a button.

THE LIST

OBSERVER'S NAME: _____

BINOCULARS _____

Open Cluster – OpCl

Globular Cluster – GbCl

Galaxy – Gal

Double Star – Dbl

Planet – Pla

Light Year - Ly

Planetary Nebula – PNeb

Emission Nebula - ENeb

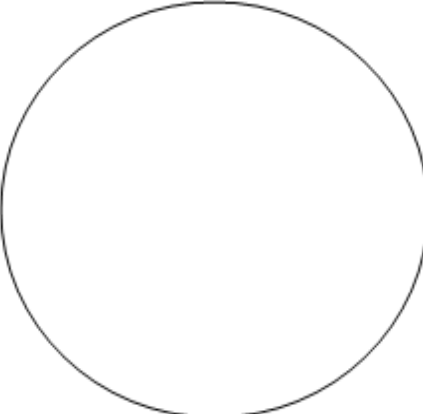
Reflection Nebula – RNeb

Dark Nebula – DNeb

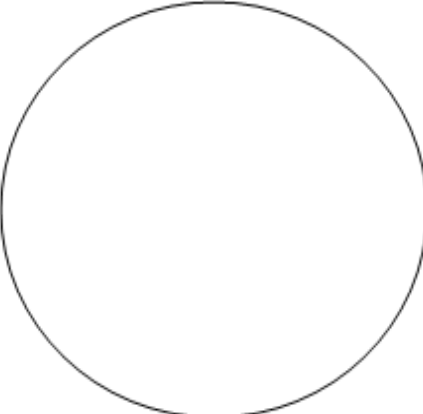
#	Object	Type	R.A.	Dec	Con	Size	Mag	Notes
B1	NGC 224 M31	Gal	00 42.3	+41 16	And	192.4	3.4	The Andromeda Galaxy Spiral 2.5 million Ly
B2	NGC 598 M33	Gal	01 33.5	+30 39	Tri	70.0	5.7	The Triangulum Galaxy Spiral 3 million Ly
B3	NGC 869/884 Double Cl	OpCl	02 19.0	+57 08	Per	29.0	5.3	The Double Cluster also Caldwell 14 7500 Ly
B4	NGC 3031 M81	Gal	09 55.3	+69 03	UMa	26.9	6.9	Bode's Galaxy Spiral 12 million Ly
B5	NGC 3034 M82	Gal	09 55.8	+69 41	UMa	9.0	8.4	An irregular galaxy very close to M81 12 million Ly
B6	Mel 111 Coma Cluster	OpCl	12 25.0	+26 00	Com	275.0	1.8	The Coma Star Cluster about 40 bright stars 280 Ly
B7	NGC 5272 M3	GbCl	13 42.2	+28 23	CVn	16.0	5.9	1 of approx. 150 GbCl orbiting Milky way 3400 Ly
B8	Jupiter	Pla	14 47.4	-15 10	Lib	37.0	-2	Can you see the 4 Galilean Moons? 483.6 million miles
B9	NGC 5904 M5	GbCl	15 18.6	+02 05	SerCp	17.0	5.7	A Globular Cluster 24500 Ly
B10	NGC 6205 M13	GbCl	16 41.7	+36 28	Her	17.0	5.7	The best GbCl northern hemisphere 22200 Ly
B11	NGC 6229	GbCl	16 47.0	+47 32	Her	4.5	9.4	Another GbCl in Hercules 10000 Ly
B12	NGC 6218 M12	GbCl	16 47.2	-01 57	Oph	15.0	6.8	GbCl 15700 Ly
B13	NGC 6254 M10	GbCl	16 57.1	-04 06	Oph	15.0	6.6	GbCl 14300 Ly
B14	NGC 6341 M92	GbCl	17 17.1	+43 08	Her	11.0	6.4	GbCl 26700 Ly
B15	IC 4665	OpCl	17 46.3	+05 43	Oph	70.0	4.2	OpCl 1400 Ly
B16	NGC 6523 M8	ENeb	18 03.3	-24 23	Sag	90	6.0	The Lagoon Nebula 4100 Ly
B17	Saturn	Pla	18 13.1	-22 37	Sgr	42	1.1	Can you see the rings? Titan? 855.6 million miles
B18	NGC 7789	OpCl	18 27.7	+06 34	Oph	27.0	4.6	OpCl also Caroline's Rose 7600 Ly
B19	NGC 5720 M57	PNeb	18 53.3	+33 01	Lyr	86.0	8.8	PNeb also Ring Nebula 2300 Ly
B20	Cr399 Coathanger	OpCl	19 25.4	+20 11	Vul	60.0	3.6	Asterism known also known as Brocchi's Cluster
B21	Albireo	Dbl	19 30.4	+27 57	Cyg	-	5.0	Beautiful one amber and the other blue/green 430 Ly
B22	NGC 6826	PNeb	19 45.0	+50 34	Cyg	126.0	8.8	The "Blinking Planetary" also Caldwell 15, 2000 Ly
B23	NGC 6853 M27	PNeb	19 59.6	+22 43	Vul	8.0	7.3	The Dumbbell Nebula 1360 Ly
B24	Mars	Pla	20 20.1	-26 17	Cap	24	-2	Can you make out any features? 35.3 million miles
B25	NGC 6913 M29	OpCl	20 23.9	+38 32	Cyg	6.0	6.6	OpCl 6000 Ly
B26	NGC 6960 Veil West	ENeb	20 45.4	+30 43	Cyg	70.0	7.0	The west part of a supernova remnant 1470 Ly
B27	LDN 935	DNeb	20 56.4	+43 52	Cyg	90	-	Wide dark lane separating NGC 7000 and IC 5070
B28	NGC 7000	ENeb	20 59.1	+44 31	Cyg	120	4.0	The North American Nebula 1600 Ly
B29	NGC 7078 M15	GbCl	21 30.0	+12 10	Peg	12.0	6.0	GbCl 33600 Ly

B30	NGC 7092 M39	OpCl	21 32.2	+48 26	Cyg	31.0	4.6	OpCl 824 Ly
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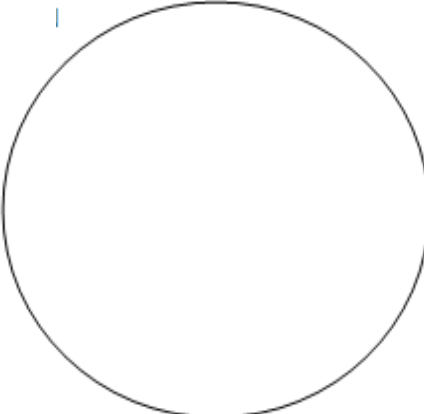
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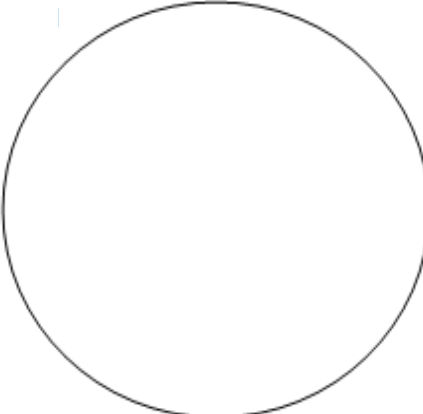
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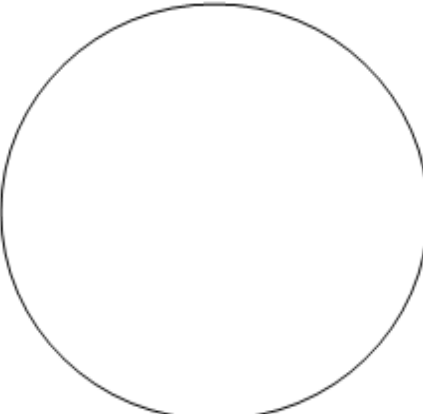
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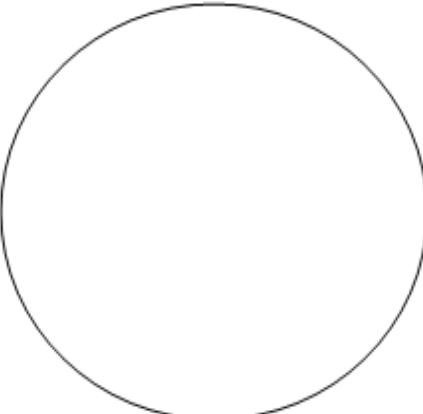
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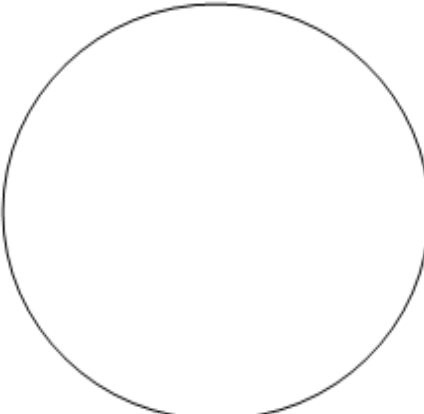
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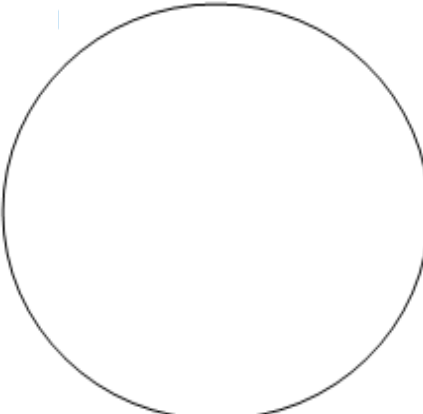
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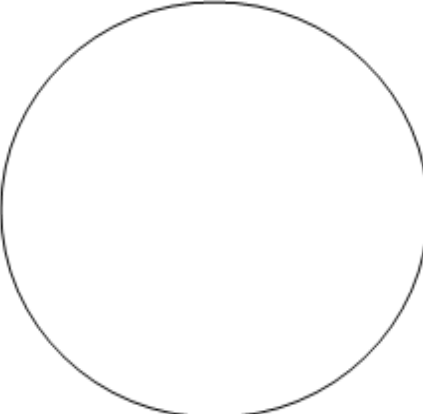
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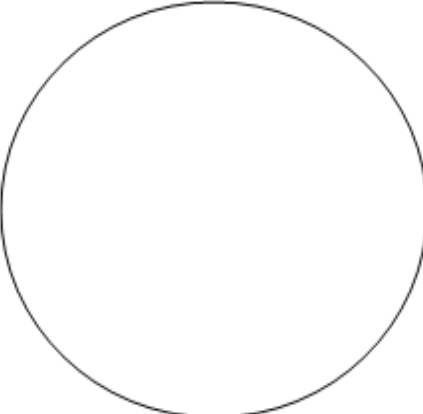
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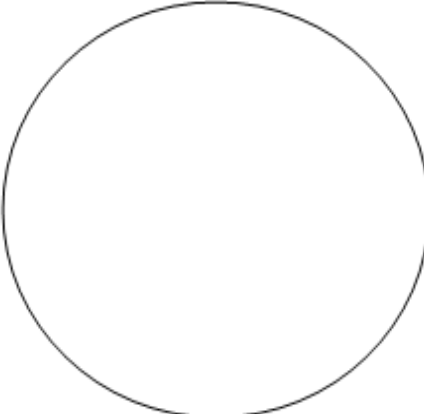
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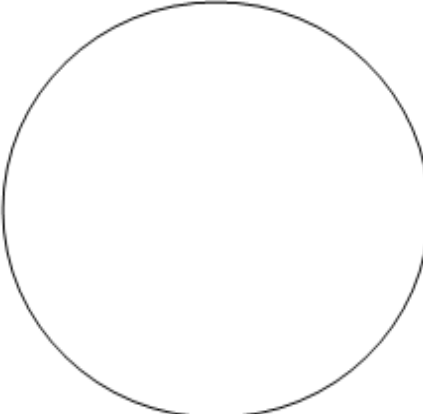
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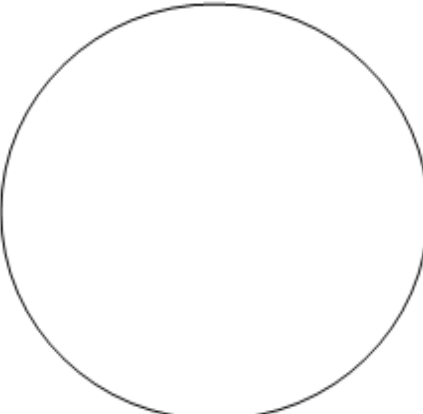
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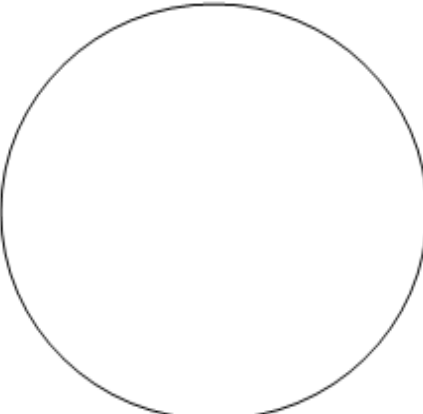
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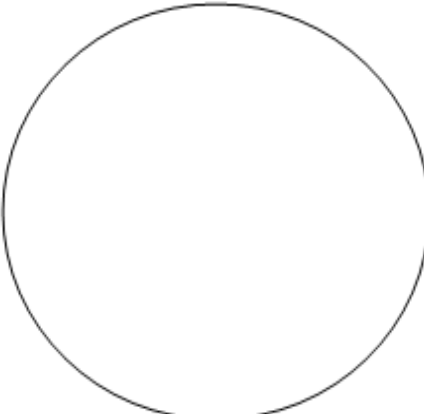
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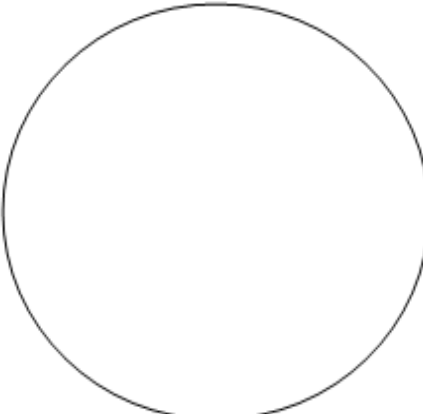
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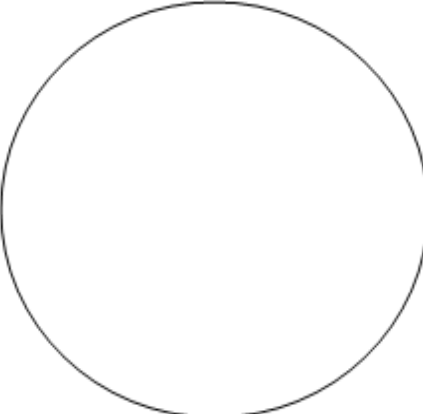
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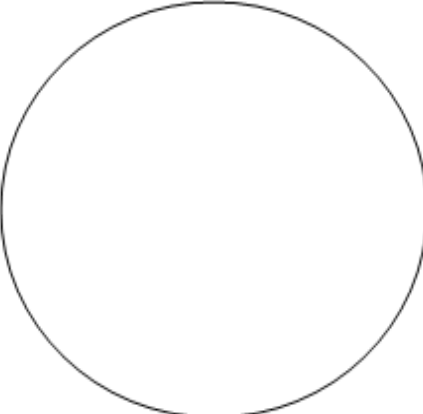
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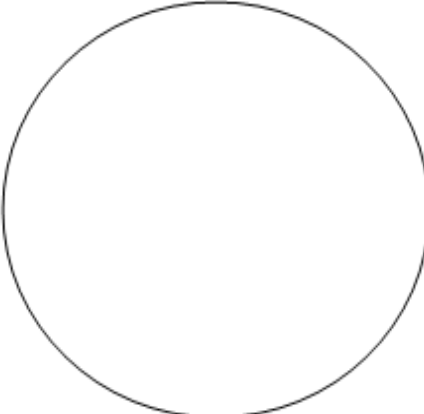
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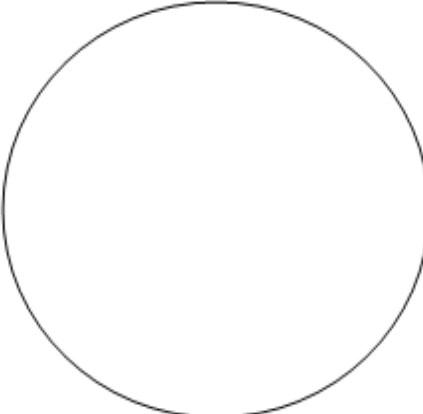
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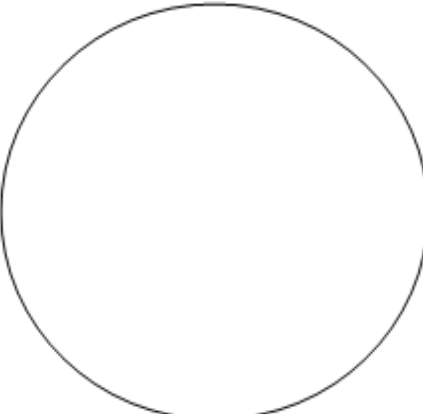
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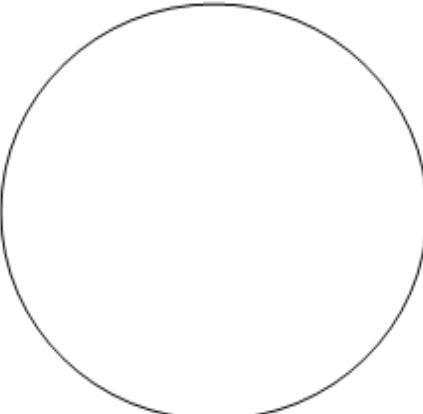
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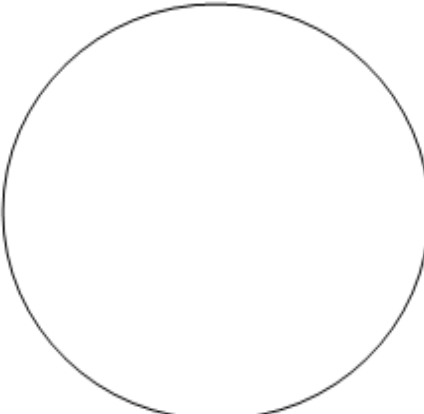
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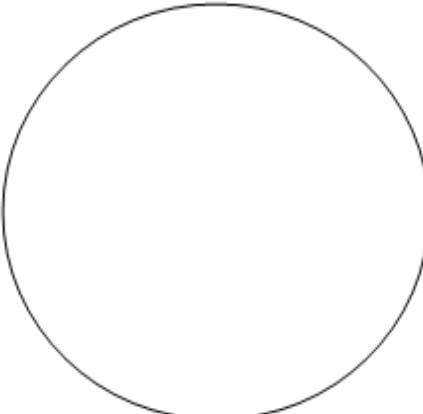
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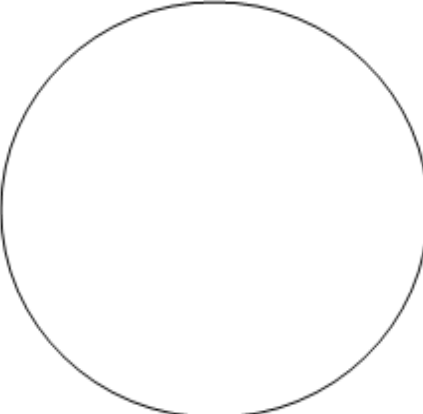
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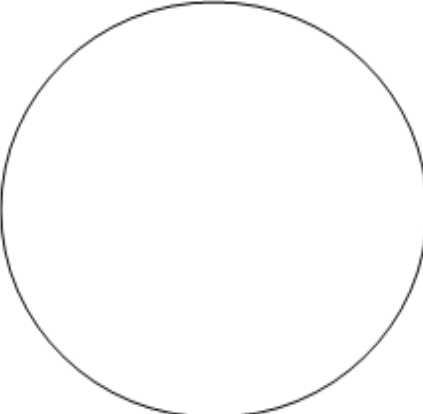
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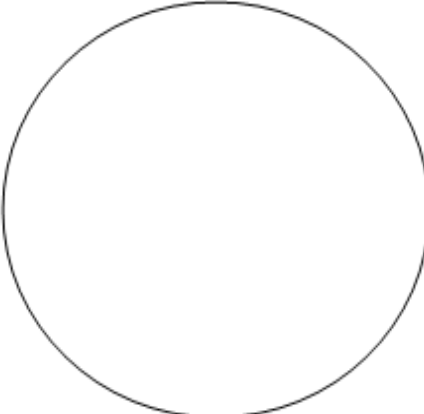
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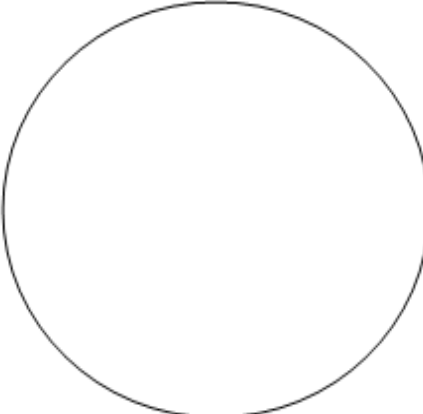
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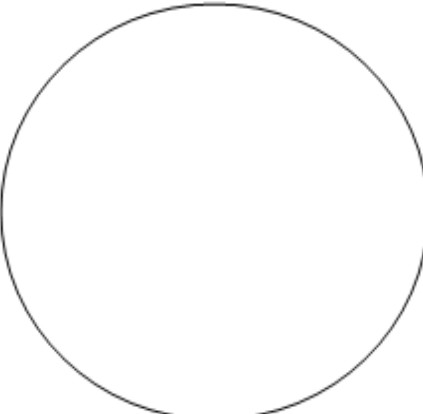
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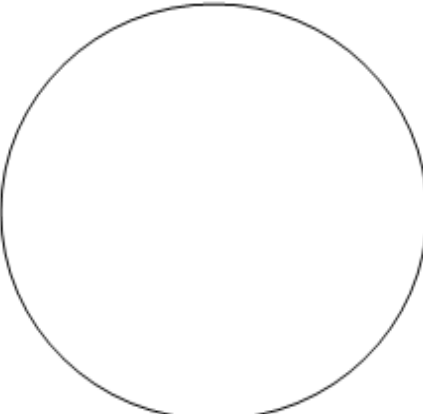
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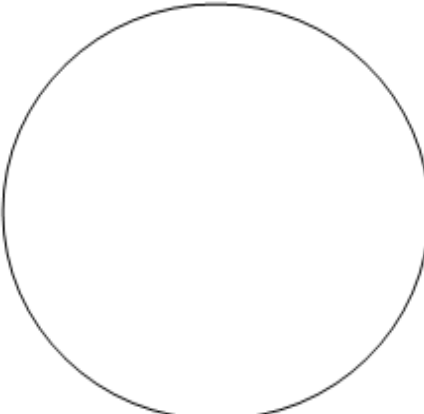
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