

Leslie Montes; ASTR 3600-01

Date: October 30, 2021

Location: South Gate

bucket D1: 26 cm

bucket D2: 19.1 cm

D: $(26\text{cm} - 19.1\text{ cm}) / 2 = 3.45\text{ cm}$

H: 75.7 cm

smallest z1: 47.61648664

smallest z2: 47.65085642

A = z2 - z1; $47.65085642 - 47.61648664 = 0.03436978$

R = $180 * D / (A * \pi)$; $180 * 3.45 / (0.03436978 * \pi) = 5,751.2861$

Time	S	X1	L=S+X1-D	tan(z)= L/H	z= ATAN(L/H)
12:09 pm	75.2 cm	12cm	83.75 cm	1.106334	47.89018348
12:12 pm	75 cm	12cm	83.55 cm	1.103620	47.82202892
12:15 pm	74.9 cm	12cm	83.45 cm	1.1024596	47.78788439
12:18 pm	74.8 cm	12cm	83.35 cm	1.100914	47.75369494
12:21 pm	74.7 cm	12cm	83.25 cm	1.099757	47.7194605
12:24 pm	74.6 cm	12cm	83.15 cm	1.098600	47.68518102
12:27 pm	74.5 cm	12cm	83.05 cm	1.0974455	47.65085642
12:30 pm	74.5 cm	12cm	83.05 cm	1.0974455	47.65085642
12:33 pm	74.4 cm	12cm	82.95 cm	1.095908	47.61648664
12:36 pm	74.5 cm	12cm	83.05 cm	1.0974455	47.65085642
12:39 pm	74.7 cm	12cm	83.25 cm	1.099757	47.7194605
12:42 pm	74.9 cm	12cm	83.45 cm	1.1024596	47.78788439
12:45 pm	75 cm	12cm	83.55 cm	1.103620	47.82202892
12:48 pm	75.1 cm	12cm	83.65	1.1051699	47.85612859
12:51 pm	75.3 cm	12cm	83.85 cm	1.107499	47.92419363
12:54 pm	75.5 cm	12cm	84.05 cm	1.110223	47.99208
12:57 pm	75.8 cm	12cm	84.35 cm	1.113736	48.0935757
1:00 pm	76.1 cm	12cm	84.65 cm	1.118046	48.1946723

Graph:

Shadow Measurements

