Math 49B (8:30am – 9:20am)
Quiz 3
Fri Oct 24, 2008

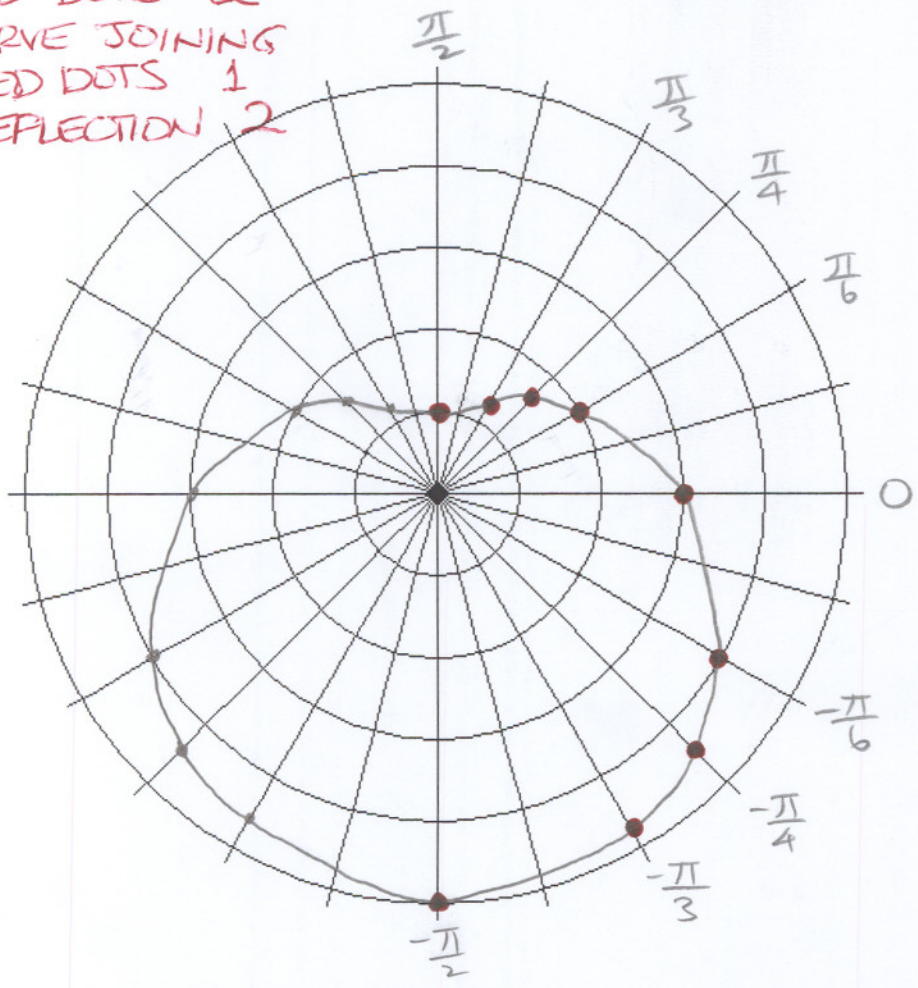
SCORE: ___ / 20 POINTS

What day of the month is your birthday ? ___ ___
What are the last 2 digits of your address ? ___ ___
What are the last 2 digits of your zip code ? ___ ___
What are the last 2 digits of your social security number ? ___ ___
[IF YOU DO NOT HAVE A SOCIAL SECURITY NUMBER, USE YOUR STUDENT ID NUMBER]

NO CALCULATORS ALLOWED

Draw the polar graph $r = 3 - 2\sin\theta$. You must run symmetry tests, and use the results to calculate the least number of points required.

- RED DOTS 2
- CURVE JOINING RED DOTS 1
- REFLECTION 2



θ	r
$-\frac{\pi}{2}$	5
$-\frac{\pi}{3}$	4.8
$-\frac{\pi}{4}$	4.4
$-\frac{\pi}{6}$	4
0	3
$\frac{\pi}{6}$	2
$\frac{\pi}{4}$	1.6
$\frac{\pi}{3}$	1.2
$\frac{\pi}{2}$	1

2 2

SUBTRACT $\frac{1}{2}$ POINT FOR EACH UNNECESSARY θ, r PAIR

SYMMETRY

$\theta = 0$ (AXIS)

① $r = 3 - 2\sin(-\theta)$ 1
$r = 3 + 2\sin\theta$

② $-r = 3 - 2\sin(\pi - \theta)$ 1
$r = 3 - 2\sin\theta$
$r = -3 + 2\sin\theta$
NO CONCLUSION ON BOTH TESTS 2

$\theta = \frac{\pi}{2}$

① $r = 3 - 2\sin(\pi - \theta)$ 1
$r = 3 - 2\sin\theta$
SYMMETRIC 2

NEED $\theta \in [-\frac{\pi}{2}, \frac{\pi}{2}]$

POLE

① $-r = 3 - 2\sin\theta$ 1
$r = -3 + 2\sin\theta$

② $r = 3 - 2\sin(\pi + \theta)$ 1
$r = 3 + 2\sin\theta$
2 NO CONCLUSION ON BOTH TESTS

SUBTRACT 1 POINT EACH TIME YOU WROTE "NOT SYMMETRIC"