Homework #19

Due **Friday, December 6** in Gradescope by **11:59 pm ET**

- **REVIEW** your class notes about Taylor and MacLaurin series
- **CONSULT** Section 10.3 of the Stewart Calculus textbook
- **WRITE AND SUBMIT** solutions to the 11 assigned problems in this handout

NOTE: Show your work, as always.

Assigned Problems for HW 19

Exercises 1–3: For 1-3, Plot the point with the given Polar coordinates. Label everything. Then find the Cartesian coordinates of the point.

1. $(r, \theta) = \left(2, \dfrac{3\pi}{2}\right)$ 2. $(r, \theta) = \left(\sqrt{2}, \dfrac{\pi}{4}\right)$ 3. $(r, \theta) = \left(-1, -\dfrac{\pi}{6}\right)$

Exercises 4–5: Plot the point of the given Cartesian coordinates. Label everything. First, find Polar coordinates (r, θ) of the point, where $r > 0$. Keep $0 \leq \theta < 2\pi$. Second, find Polar coordinates (r, θ) of the point, where $r < 0$. Keep $0 \leq \theta < 2\pi$.

4. $(x, y) = (-4, 4)$ 5. $(x, y) = (3, 3\sqrt{3})$

Exercises 6–11: Carefully sketch each of the following Polar curves. **Show all work. Also show both the Cartesian Plot and the final Polar plot. Label everything.**

6. $r = 2\cos\theta$
7. $r = 3\sin\theta$
8. $r = 1 + \sin\theta$
9. $r = 2 + 2\cos\theta$
10. $r = 3 - 3\sin\theta$
11. $r = 2\sin(2\theta)$

(Note: #11 is a new curve: a flower-petal shaped curve sometimes called a "rose." Try it!)

My (Drop-In) Office Hours: SMUD 406

Tuesday: 1:30–3:00 pm

Thursday: 1:30–3:00 pm

Friday: 2:00–3:00 pm

(or by appointment)

Math Fellow Evening Drop-in Hours: SMUD 207

Sunday	6:00–7:30pm:	**Natalie** Stott
Sunday	7:30–9:00pm:	**Oscar** Hernandez
Monday	6:00-7:30pm:	**Aaron** Cordoba
Monday	7:30–9:00pm:	**Oscar** Hernandez
Tuesday	6:00-7:30pm:	**Gretta** Ineza
Wednesday	7:30–9:00pm:	**Natalie** Stott
Thursday	6:00-7:30pm:	**Gretta** Ineza
Thursday	7:30–9:00pm:	**DJ** Beason
Friday	6:00-7:30pm:	**Aaron** Cordoba
Friday	7:30–9:00pm:	**DJ** Beason

• My Office Hours are times to drop in to my office, unannounced. Math Fellow hours are also for unannounced drop-ins, in SMUD 207, at the hours above.
All are welcome! Just stop by. Working on your calculus assignment can be fun! I encourage you to come hang out at many of these help sessions.

• **NO LATE HOMEWORK!** unless illness or emergency occurs.