'Tis told by one whom stormy waters threw,  
With fellow-sufferers by the shipwreck spared,  
Upon a desert coast, that having brought  
To land a single volume, saved by chance,  
A treatise of Geometry, he wont,  
Although of food and clothing destitute,  
And beyond common wretchedness depressed,  
To part from company and take this book  
(Then first a self-taught pupil in its truths)  
To spots remote, and draw his diagrams  
With a long staff upon the sand, and thus  
Did oft beguile his sorrow, and almost  
Forget his feeling: so (if like effect  
From the same cause produced, 'mid outward things  
So different, may rightly be compared),  
So was it then with me, and so will be  
With Poets ever. Mighty is the charm  
Of those abstractions to a mind beset  
With images and haunted by herself,  
And specially delightful unto me  
Was that clear synthesis built up aloft  
So gracefully; even then when it appeared  
Not more than a mere plaything, or a toy  
To sense embodied: not the thing it is  
In verity, an independent world,  
Created out of pure intelligence.  
-William Wordsworth, The Prelude
Tuesday workshop this week will be devoted to Bernoulli number presentations.

1. (Thursday workshop) Choose one of the following polar equations:

- \[ r = a + b \cos(\theta) \] Limacon (1)
- \[ r = a \cos(b\theta) \] Rose (2)
- \[ r = \frac{a}{1 - b \cos(\theta)} \] conic (3)
- \[ r = a \theta^b \] spiral (4)
- \[ b^4 = r^4 + a^4 - 2a^2 r^2 \cos(2\theta) \] ovals of Cassini (5)

Plot the curve for various values of the constants \( a \) and \( b \). Do at least one plot by hand. Describe how the shape of the curve changes as \( a \) and \( b \) change. What if the cosine in your equation is replaced by a sine? Finally, translate your equation into rectangular coordinates.

2. Section 16.1, problems 1a, 1d, 1g, 1n, 2a, 2g, 2j, 2n, 6a, 6b, 7, 9a.

3. Section 16.2, problems 3, 4c, 4h, 4p, 6b, 6d, 6f.

4. Section 16.5, problems 1, 4, 6, 7