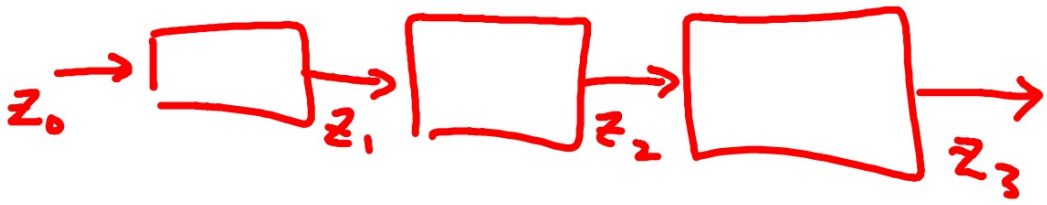
Precalc 12.8

Iterate functions using real and complex numbers

iteration

recursion



prisoner point

escaping point

orbit

Whiteboards
Quiz Tues. 12.7-12.8
Test Fri. Ch. 12 (skip section 12.9)

Lesson 12-7 *(Pages 806–814)*

Find each value to four decimal places.

1. $\ln(-3)$

2. $\ln(-4.6)$

Use the first five terms of the exponential series and a calculator to approximate the nearest hundredth.

4. $e^{1.2}$

5. $e^{-0.7}$

6. $e^{3.65}$

Use the first five terms of the trigonometric series to approximate the value four decimal places. Then, compare the approximation to the actual value.

7. $\cos \frac{\pi}{4}$

8. $\sin \frac{\pi}{6}$

9. $\cos \frac{\pi}{3}$

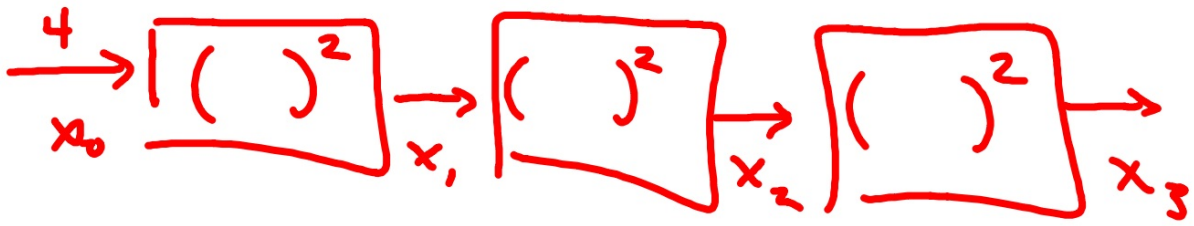
Graph orbit

Lesson 12-8 *(Pages 815–821)*

Find the first four iterates of each function using the given initial value. answers to the nearest hundredth.

1. $f(x) = 2x; x_0 = -2$

2. $f(x) = x^2; x_0 = 4$

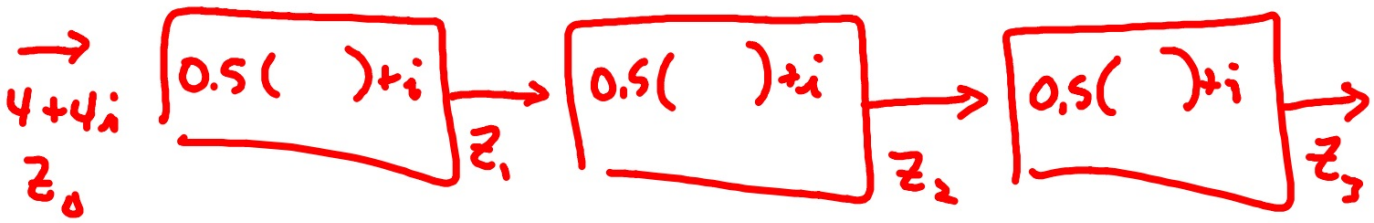


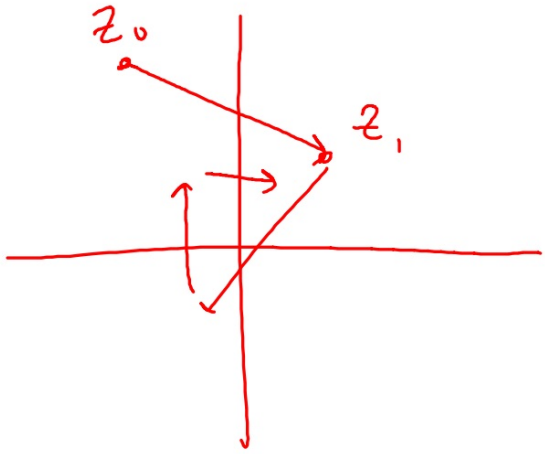
Find the first three iterates of the function $f(z) = 0.5z + i$ for each initial value.

3. $z_0 = 2i$

4. $z_0 = 4 + 4i$

Graph orbit




z_0
z_1