LARSON—MATH 255–HOMEWORK WORKSHEET 12
Problems.

1. Log in to CoCalc.

   (a) Start the Chrome browser.

   (b) Go to `https://cocalc.com`

   (c) Login (**your VCU email address** is probably your username).

   (d) You should see an existing Project for our class. Click on that.

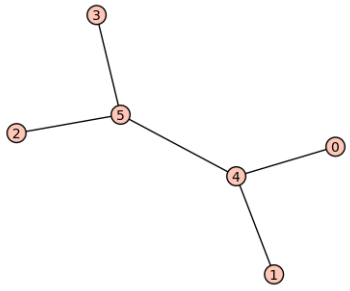
   (e) Click "New", then "Sage Worksheet", then call it **h12**.

   Annotate your work carefully and completely. The more explanation the better!. If you are stuck, get help, talk to your classmates, try things. At worst, your worksheet should include all your dead ends and **attempts**. (You can't ever succeed unless you **try**).

2. (**Ramanujan Related**) Find the smallest integer which can be written as the sum of 2 **squares** in 2 different ways.

3. (**Dynamical Systems**) Find all real values of a so that the sequence $\{a_n\}_{n\geq 0}$ defined by $a_0 = a$ and $a_{n+1} = a_n^2 - 2$ for $n \geq 0$, converges. We found several in class. What others are there?

4. (**Graphs and Graph Theory**) Make a Sage graph object with the name "Milkbone":



5. Find the adjacency matrix of the *milkbone* graph.

Getting your homework recorded

When you are done writing up your nicely annotated code examples...

(a) Click the Printer-icon button and make a pdf of this worksheet. (If Cocalc hangs, click the *File* button, then Save-and-Download as pdf (via "JupyterLab notebook" is slightly more attractive than than the "Classic" option).

(b) Send me an email with an informative header like "Math 255—h12 worksheet attached" (so that it will be properly recorded).

(c) Remember to attach your homework worksheet pdf!