<https://bitbucket.org/bunchofmortys/project/wiki/Home>

The first thing the Visual Arithmetic Solver needs to do is take a photo of a math problem and save it to a file. We chose the Raspberry Pi Camera V2 to accomplish this. A USB camera could have also been used, and would have had a better quality photo, but we went with the Raspberry Pi Camera because it was available and it is easy to implement.

First we make sure the Raspberry Pi is not powered up to connect the camera. After finding the camera port, the strip is connected so the blue part is facing away from the HDMI port. Next the Pi Camera is configured by going to Preferences >> Raspberry Pi Configuration>> Configure Raspberry Pi System and then the camera is enabled and the Raspberry Pi is rebooted.

Using the functions start\_preview(), capture() and close() the image is captured and saved to file. Some of the camera settings were changed in order to one, have the preview window size match that of the captured image, and two, keep the images consistent. The sensor mode was set to two and the resolution was set to 1024x768 for the image to match the preview window. The ISO was set to 200 for daytime light levels, and the shutter speed was set equal to the exposure speed.