**Q1.** Draw the unit circle. By observation and basic calculation, the answer is

.

**Q2.** Given , we can use the difference of sines formula in terms of degrees, and calculate .

**Q3.** From we can get , and because , . To get the value, list the equation

. Solving this yields , and so

.

**Q4.** Substitute as . After solving for two solutions of , we where one can be regarded as the cosine for the other, we solve for with the sum of sines formula and finally get .

**Q5.** Given = 0.8, we can find that through calculation where since the triangle is acute. Using the law of sine, we know that the ratio of the areas of and are determined by , thus , represented by the ratio of the areas of and , is equal to .