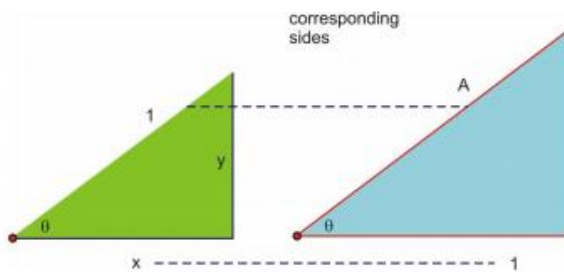
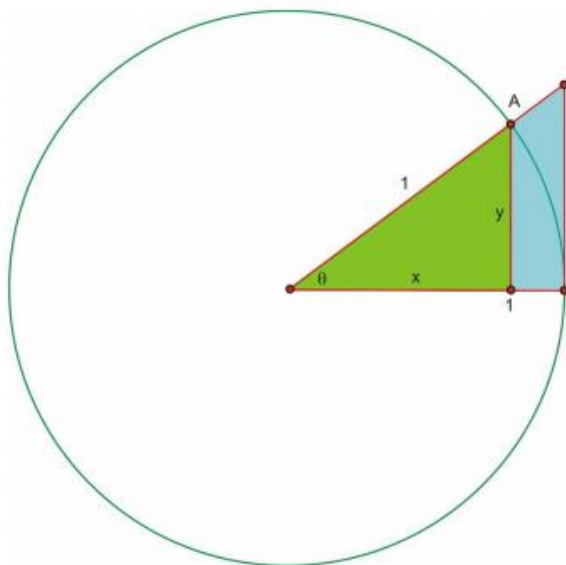


## 2.3 Circular Functions of Real Numbers

1. Use similar triangles:



So:

$$\frac{x}{1} = \frac{1}{A} \rightarrow Ax = 1 \rightarrow A = \frac{1}{x}$$

$$\cos \theta = x \rightarrow \frac{1}{\cos \theta} = \frac{1}{x} \rightarrow \frac{1}{\cos \theta} = \sec \theta = \frac{1}{x}$$

$$\therefore \sec \theta = A$$

2. Using the Pythagorean theorem,  $\tan^2 \theta + 1 = \sec^2 \theta$ .

