

55 (a) $\sin^2 \theta + \cos^2 \theta = \left(\frac{a}{c}\right)^2 + \left(\frac{b}{c}\right)^2 = \frac{a^2}{c^2} + \frac{b^2}{c^2} = \frac{a^2 + b^2}{c^2} = \frac{c^2}{c^2} = 1$

(b) $Y_1 = (\sin(X))^2 + (\cos(X))^2$ starting at $x = 0$ and incrementing by 10. See *Figure 55*.

| X | Y ₁ |
|----|----------------|
| 0 | 1 |
| 10 | 1 |
| 20 | 1 |
| 30 | 1 |
| 40 | 1 |
| 50 | 1 |
| 60 | 1 |

$Y_1 = (\sin(X))^2 + (\cos(X))^2$

Figure 55