1.2

40/

$y = c_1 \cos(2x) + c_2 \sin(2x)$

$y(0) = 0 \qquad y(\pi) = 0$

$c_1 \cos(0) + c_2 \sin(0) = 0$

$c_1 \cos(2\pi) + c_2 \sin(2\pi) = 0$

$\boxed{\begin{array}{l} c_1 = 0 \\ c_1 = 0 \end{array}}$ lots of solns

$\boxed{y = c_2 \sin(2x)}$

$$\left[\begin{array}{cc|c} 1 & 0 & 0 \\ 1 & 0 & 0 \end{array}\right] \sim \left[\begin{array}{cc|c} 1 & 0 & 0 \\ 0 & 0 & 0 \end{array}\right]$$