... 1.32. (2).

3) $x(t)$ periodic $\Rightarrow$ $y_2(t)$ periodic

$x(t)$ periodic

$y_2(t) = x\left(\frac{t}{2}\right) \overset{C.V.[t \to 2t]}{\Leftrightarrow} y_2(2t) = x(t)$ ~~← same case as (2)~~

~~w.o.l.o.g. $x(t) \to y_2(t)$, $y_2(t) \to x(t)$~~

~~Same case as (2), w.o.l.o.g. transform $x(t) \to y_2(t)$, $y_2(t) \to x(t)$.~~

~~Same~~ Same case as (2): mutatis mutandis, we can prove that:

$y_2(t)$ is periodic, with fundamental period $T_{y_2} = 2T_x$;

4) $y_2(t)$ periodic $\Rightarrow$ $x(t)$ periodic

Same case as (1): mutatis mutandis, we can prove that:

$x(t)$ is periodic, with fundamental period $T_x = \frac{T_{y_2}}{2}$