Voorbeelden/Sommen TijdsInvariantie

Som 1.35 Are the following systems time-varying or time-invariant?

(a) $\frac{d^2y(t)}{dt^2} + 2ty(t) = f(t)$

(b) $\frac{d^2y(t)}{dt^2} + y(t)\frac{dy(t)}{dt} + y(t) = 4f(t)$

(c) $\frac{d^4y(t)}{dt^4} - 5\frac{d^3y(t)}{dt^3} + 2\frac{dy(t)}{dt} - y(t) = \frac{df(t)}{dt} - 4f(t)$

(d) $t^2\frac{d^2y(t)}{dt^2} + y^2(t) = f(t)$

Som 1.41 Show whether the following systems are time-invariant:

(a) $y(t) = tx(t) + 5$

(b) $y(t) = x^2(t)$

Answers:

1.35 (a) time-varying system.
(b) time-invariant system.
(c) time-invariant system.
(d) time-varying system.

1.41 (a) Not time-invariant, (b) Time-invariant.