

E 2.21 $\omega(t) = 0.25 + 0.0234e^{-5t} - 0.1562te^{-t} - 0.2734e^{-t} .$

E 2.30 $v(t) = -10.2je^{(-4+19.6j)t} + 10.2je^{(-4-19.6j)t} = 20.4e^{-4t} \sin 19.6t .$

15.27

- a) $u(t) + 2e^{-t}u(t)$
- b) $3\delta(t) - 11e^{-4t}u(t)$
- c) $(2e^{-t} - 2e^{-3t})u(t)$
- d) $(3e^{-4t} - 3e^{-2t} + 6te^{-2t})u(t)$

15.29

$$(2 - 2e^{-2t} \cos(3t) - \frac{2}{3}e^{-2t} \sin(3t))u(t)$$

15.31

- a) $(-3e^{-t} + 20e^{-2t} - 15e^{-3t})u(t)$
- b) $(-e^{-t} + e^{-2t} + 3te^{-2t} - \frac{t^2}{2}e^{-2t})u(t)$
- c) $(-0.2e^{-2t} + 0.2e^{-t} \cos(2t) + 0.4e^{-t} \sin(2t))u(t)$