For each function, find its Laplace transform.

- 1)  $f(t) = \sin(at + b)$ , where a and b are constant.
- 2)  $f(t) = \sin t \cos^2(2t)$ .
- 3)  $f(t) = (at + b)^2$ , where a and b are constants.
- 4)  $f(t) = \cos(at + b)$ , where a and b are constants.
- 5)  $f(t) = \sinh(at)$ , where a is a constant.
- 6)  $f(t) = \cosh(at)$ , where a est une constante.
- 7)  $f(t) = te^{at}$ , where a is a constant.
- 8)  $f(t) = t^n e^{at}$ , where n is an integer and a is a constant.
- 9)  $f(t) = t \sin at$ , where a is a constant.
- 10)  $f(t) = t \cosh(at)$ , where a is a constant.
- 11)  $f(t) = t^2 \sinh(at)$ , where a is a constant.
- 12)  $f(t) = \sin 3t + \cos 3t$ .
- 13)  $f(t) = e^{3t} \cosh(4t) + 20t$ .
- $14) \ f(t) = \cos t \sin t.$
- 15)  $f(t) = te^{-t}\sin(2t)$ .
- $16) \ f(t) = t^3 \cos t \sin t.$