Supplemental problems for Blanchard, 4th Edition, Section 6.1

For Problems 28 through 33 use a table of Laplace transform pairs to find the Laplace transform of the given function. Assume units are in radians, not degrees, if that is applicable.

28. $f(t) = 2e^t + 5$

29. $f(t) = 7\cos(3t)$

30. $f(t) = 15\sin\left(4t + \frac{\pi}{4}\right)$

31. $f(t) = 170e^{-5t}\cos(277t)$

32. $f(t) = t^3 e^{-4t}$

33. $f(t) = e^{9t}\sin(-2t)$

For problems 34 through 36 find the Laplace transform of the given function using a table of Laplace transform properties along with a table of Laplace transform pairs. Assume units are in radians, not degrees, if that is applicable.

34. $f(t) = u(t-1)e^{(-2t+2)}$

35. $f(t) = t\cos(5t)$

36. $f(t) = e^{-3t}\cos\left(4t + \frac{\pi}{2}\right)$