

Laplace Transforms

Find the Laplace transform of each of the following.

1. $f(t) = t^7 + 7\sqrt{t} - 8t^{\frac{7}{2}} - 8$

2. $h(t) = 3\sin(8t) + 6e^{-5t} \cos\left(\frac{3t}{4}\right)$

3. $g(t) = 10e^{4t} - 7\cos(t) + \cosh(2t)$

4. $h(t) = 12t\sin(4t) - \cos(5-9t)$

Inverse Laplace Transforms

Find the inverse Laplace transforms of each of the following.

5. $G(s) = \frac{1-4s}{3s^2 - 2s + 3}$

6. $F(s) = \frac{2s^2 - 1}{(s+2)(s-1)(4s-3)}$

7. $G(s) = \frac{6s+7}{s^2(s+3)}$

8. $H(s) = \frac{9s+4}{(s^2+1)(s^2+8s+3)}$

9. $F(s) = \frac{s+s^2}{(s-2)(s^2+2)^2}$