1. Find $x * x$

2. Find $e^{3x} * e^{7x}$

3. Find $\cos(x) * x$

Use convolutions to find the inverse Laplace Transform of the given function and simplify the convolution.

4. $F(s) = \dfrac{1}{(s-3)(s+4)}$

5. $F(s) = \dfrac{6}{s^2(s^2+9)}$

Find the Laplace transform of the following functions:

6. $g(x) = \begin{cases} 0 & x < 2 \\ \cos(x-2) & x \geq 2 \end{cases}$

7. $g(x) = \begin{cases} 0 & x < 4 \\ e^x & x \geq 4 \end{cases}$

Determine the inverse Laplace transform of the following functions:

8. $F(s) = e^{-3s}\dfrac{s}{s^2+4}$

9. $F(s) = e^{-2s}\dfrac{2}{s-3}$