Taylor Series Exercises

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In Exercises 1-3, give the well-known Taylor Series expansion (with center $c = 0$) for $f(x)$.

1. $f(x) = e^x$

2. $f(x) = \sin(x)$

3. $f(x) = \cos(x)$

In Exercises 4-8, use a well-known Taylor Series representation to derive a Taylor Series representation for the function given.

4. e^{5x}

5. $\sin(3x^2)$

6. $\cos(2x - 5)$

7. $x^2 e^x$

8. $\frac{1}{x} \sin(x)$