

$$\begin{aligned}
 f(x) &= 4x^2 - 3x + 5 \\
 &= 4\left(x^2 - \frac{3}{4}x\right) + 5 \\
 &= 4\left[\left(x - \frac{3}{8}\right)^2 - \left(\frac{3}{8}\right)^2\right] + 5 \\
 &= 4\left(x - \frac{3}{8}\right)^2 - 4 \times \frac{9}{64} + 5 \\
 &= 4\left(x - \frac{3}{8}\right)^2 - \frac{9}{16} + \frac{80}{16}
 \end{aligned}$$

$$f(x) = 4\left(x - \frac{3}{8}\right)^2 + \frac{71}{16}$$


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$$\begin{aligned}
 g(x) &= 5x^2 + 4x - 3 \\
 &= 5\left(x^2 + \frac{4}{5}x\right) - 3 \\
 &= 5\left[\left(x + \frac{4}{10}\right)^2 - \left(\frac{4}{10}\right)^2\right] - 3
 \end{aligned}$$

$$\frac{4}{10} = \frac{2}{5}$$

done

$$\begin{aligned}
 g(x) &= 5\left[\left(x + \frac{2}{5}\right)^2 - \left(\frac{2}{5}\right)^2\right] - 3 \\
 &= 5\left(x + \frac{2}{5}\right)^2 - 5 \times \frac{4}{25} - 3 \\
 &= 5\left(x + \frac{2}{5}\right)^2 - \frac{4}{5} - \frac{15}{5}
 \end{aligned}$$

$$g(x) = 5\left(x + \frac{2}{5}\right)^2 - \frac{19}{5}$$