Copyright (C) 2018, 2012, 2016 by Pearson Education Inc. All Rights Reserved, please visit www.pearsoned.com/permissions/

EX.2.1.5, Sauer3

Use the approximate operation count $2n^3/3$ for Gaussian elimination to estimate how much longer it takes to solve n equations in n unknowns if n is tripled.

Copyright (c) 2021, Julien Langou. All rights reserved, please visit https://creativecommons.org/licenses/by/4.0/.

EX.2.1.5, Sauer3, solution, Langou

If n increases to 3n, the approximate operation count changed from $2n^3/3$ to $2(3n)^3/3 = 54n^3/3$, which will take 27 times as long.