

[Course](#)

[Progress](#)

[Dates](#)

[Discussion](#)

[Syllabus](#)

[Outline](#)

[laff routines](#)

[Community](#)

 [Course](#) / [Exam 1](#) / [E1.2 Sample Exam 1](#)



< Previous

 ✓

 ✓

 ✓













Next >

E1.2.3 Sample Question 3

 Bookmark this page

3. For each of the following functions, indicate whether it is a linear transformation (circle TRUE) or not (circle FALSE). Justify your answer.

$$(a) \ f\left(\begin{pmatrix} x_0 \\ x_1 \\ x_2 \end{pmatrix}\right) = \begin{pmatrix} x_1 x_0 \\ x_2 \end{pmatrix} \quad \text{TRUE/FALSE}$$

$$(b) \ f\left(\begin{pmatrix} x_0 \\ x_1 \\ x_2 \end{pmatrix}\right) = \begin{pmatrix} 3x_0 + x_1 \\ x_0 \\ x_2 \end{pmatrix} \quad \text{TRUE/FALSE}$$

$$(c) \ f\left(\begin{pmatrix} x_0 \\ x_1 \\ x_2 \end{pmatrix}\right) = \begin{pmatrix} 3x_0 + x_1 + 1 \\ x_0 \\ x_2 \end{pmatrix} \quad \text{TRUE/FALSE}$$

Answer Video

3. For each of the following functions $f: \mathbb{R}^3 \rightarrow \mathbb{R}^3$, indicate whether it is a linear transformation (circle TRUE) or not (circle FALSE). Justify your answer.

(a) $f\left(\begin{pmatrix} x_0 \\ x_1 \\ x_2 \end{pmatrix}\right) = \begin{pmatrix} x_1 x_0 \\ x_2 \end{pmatrix}$ TRUE/FALSE

(b) $f\left(\begin{pmatrix} x_0 \\ x_1 \\ x_2 \end{pmatrix}\right) = \begin{pmatrix} 3x_0 + x_1 \\ x_0 \\ x_2 \end{pmatrix}$ TRUE/FALSE

(c) $f\left(\begin{pmatrix} x_0 \\ x_1 \\ x_2 \end{pmatrix}\right) = \begin{pmatrix} 3x_0 + x_1 + 1 \\ x_0 \\ x_2 \end{pmatrix}$ TRUE/FALSE **X 1.6**

Calculator

9:30 / 10:05

▶ 2.0x

Video
 [Download video file](#)

Transcripts
 [Download SubRip \(.srt\) file](#)
 [Download Text \(.txt\) file](#)

Discussion

Topic: Exam 1 / E1.2.3

Hide Discussion

Add a Post

Show all posts

by recent activity

There are no posts in this topic yet.

< Previous

Next >



edX

- [About](#)
- [Affiliates](#)
- [edX for Business](#)
- [Open edX](#)
- [Careers](#)
- [News](#)

Legal

- [Terms of Service & Honor Code](#)
- [Privacy Policy](#)
- [Accessibility Policy](#)
- [Trademark Policy](#)
- [Sitemap](#)
- [Cookie Policy](#)
- [Your Privacy Choices](#)

Connect

- [Idea Hub](#)
- [Contact Us](#)
- [Help Center](#)
- [Security](#)
- [Media Kit](#)



Calculator



© 2023 edX LLC. All rights reserved.
深圳市恒宇博科技有限公司 [粤ICP备17044299号-2](#)