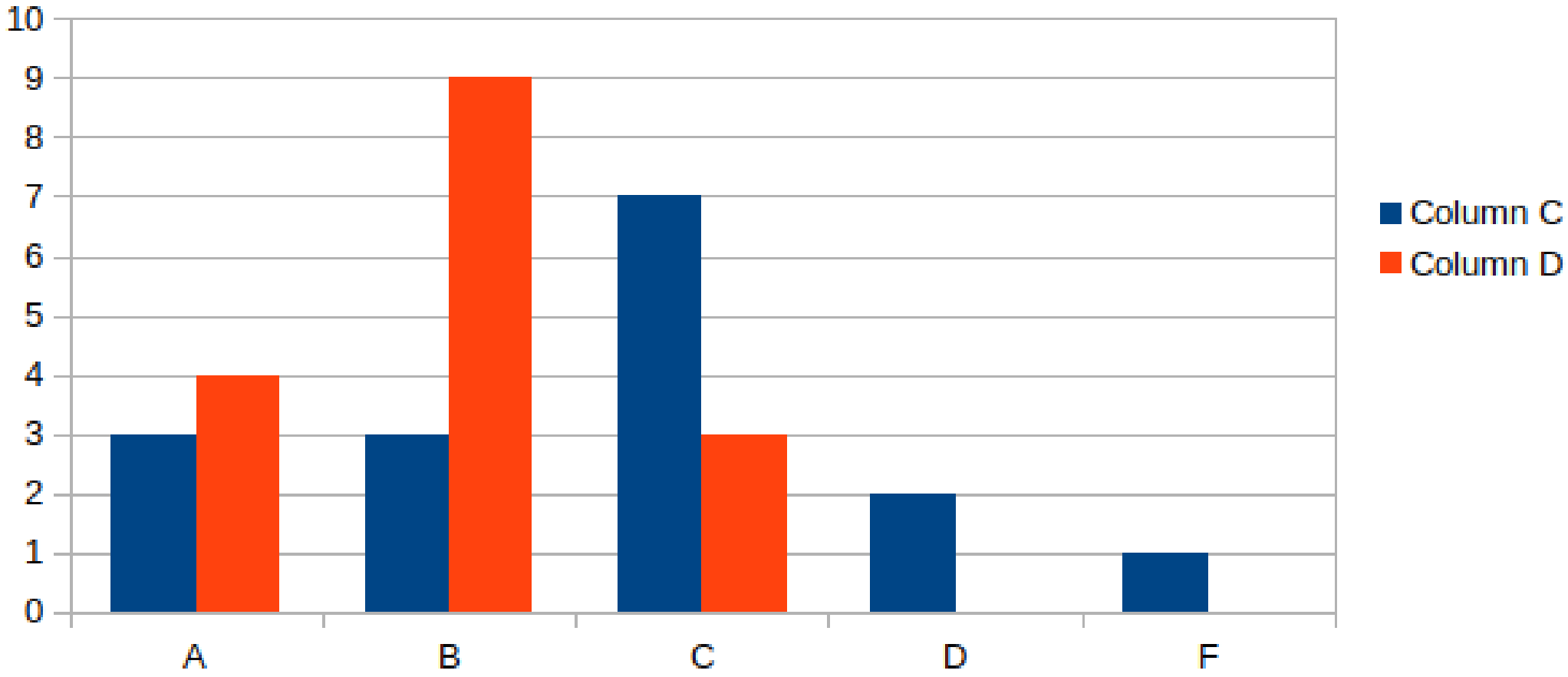
Lecture 20 outline:

- Demos
  - Two types of charge
  - Induced charge
  - Charge on outside of conductors
- Return exam
  - Hope you are reading book
  - Office hours are more strongly encouraged, particularly for C and below.
  - Exam corrections, up to 1/3 credit back.
- Separation of Variables

Raw data (blue) Mean 77

"Earned curve" (red) Mean 85



Exam review

Example 3-3

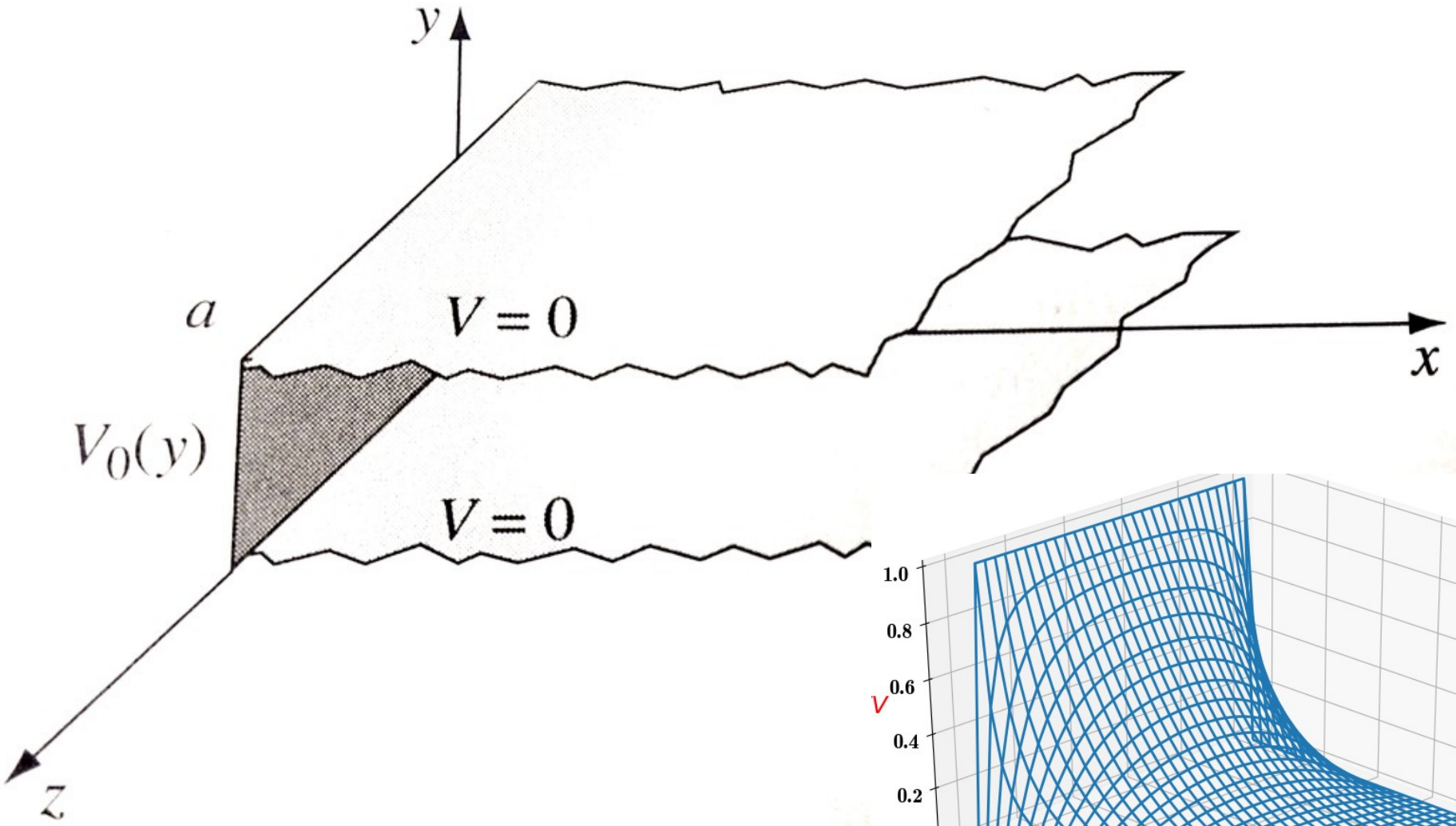


FIGURE 3.

Example 3-3

$(i)\ V = 0 \text{ at } y = 0$

$(ii)\ V = 0 \text{ at } y = a$

$(iii)\ V = V_0(y) \text{ at } x = 0$

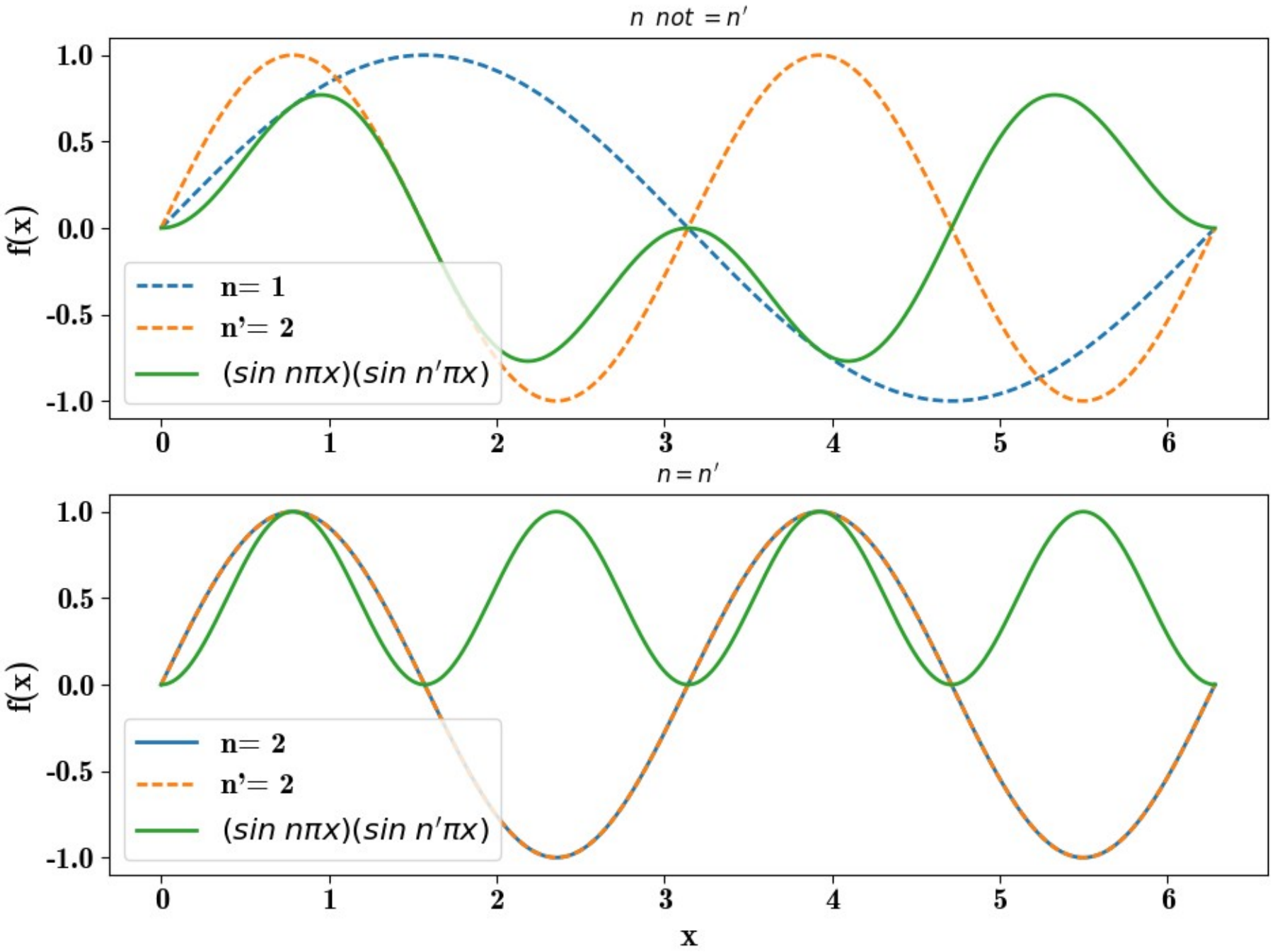
$(iv)\ V \to 0 \text{ at } x \to \infty$

How to find the Cn?

$$V(x,y)=\sum_n C_n e^{(-n\pi x/a)}\sin\frac{n\pi}{a}y$$

$$\int_0^a V_0(y)\sin(n'\pi y/a)\,dy=\sum_n C_n\int_0^a \sin\frac{n\pi}{a}y\sin\frac{n'\pi}{a}y\,dy$$

Fouriers Trick



Fouriers Trick