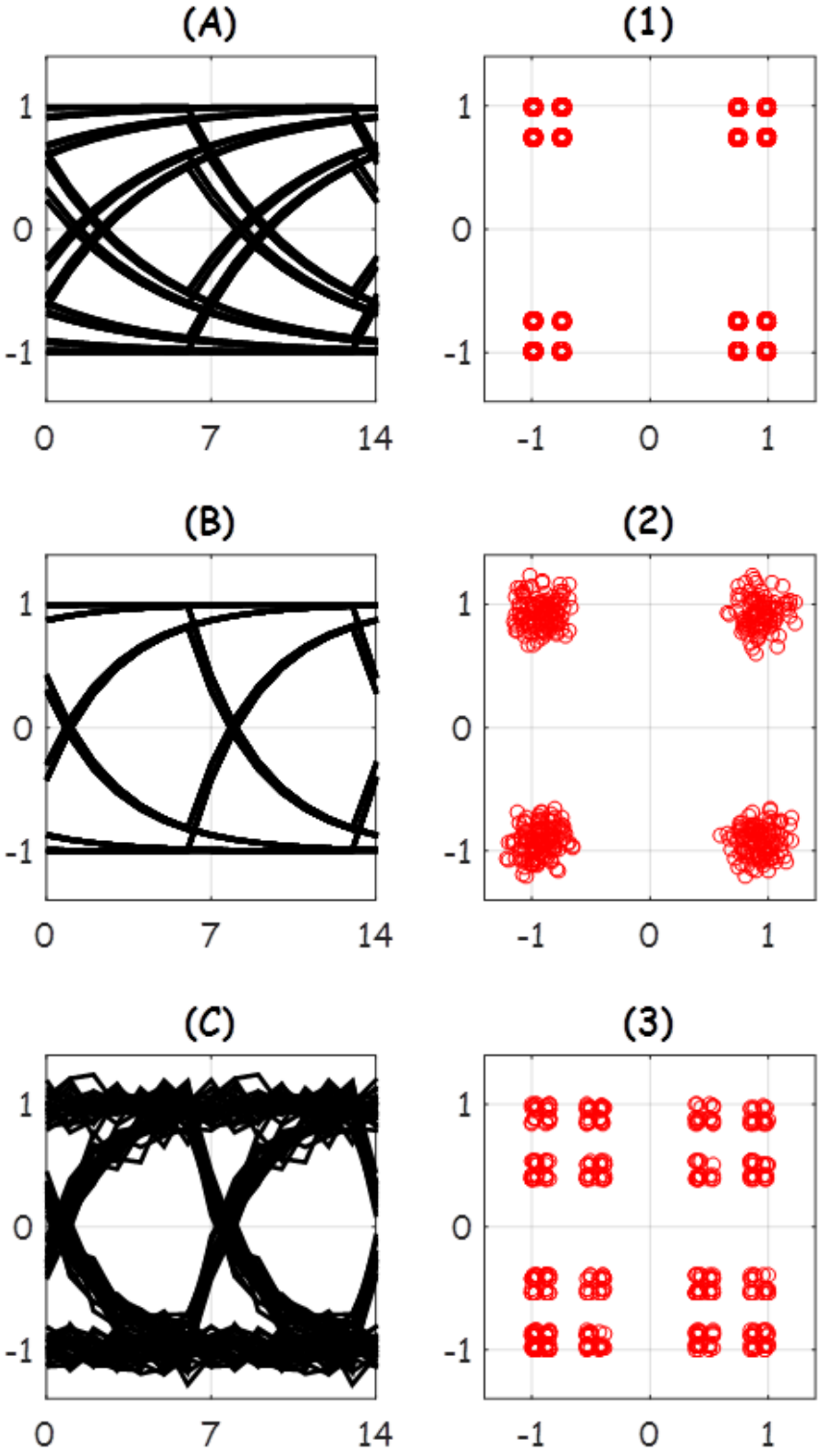
9.4 QUIZ QUESTION 1 (1/1 point)

Suppose that a QPSK communication system has the eye diagrams and constellation diagrams shown below. Assume that the in-phase and quadrature channels have identical eye diagrams, and that bit decisions are made by comparing the samples at index 6 on the eye diagram.



Which constellation diagram corresponds to which eye diagram?

A:

3 ▾ ✔ **Answer:** 3

B:

1 ▾ ✔ **Answer:** 1

C:

2 ▾ ✔ **Answer:** 2

EXPLANATION

At index 6, eye diagram B has approximately two different values for 1 and 0 bits. Thus, the constellation diagram will achieve four different values at each of the four possible bit combinations between in-phase and quadrature channels. Thus, eye diagram B corresponds to constellation diagram 1. Due to noise, eye diagram C achieves a continuum of different values at index 6, corresponding to constellation diagram 2. By elimination, eye diagram A corresponds to constellation diagram 3.

You have used 2 of 3 submissions