Checking a Reaction When One Signal Stays Flat

Scoring guide · one credit per question · review written work against each rubric

Checking a Reaction When One Signal Stays Flat

Question 1

Choice (3)

Each particle of either species contributes one to X, so X reports their total.

Question 2

Subtracting X from Y leaves one unit per B and zero per C. At 10 s B is 10 − 6 = 4, so C is 6 − 4 = 2.

Question 3

At 0 s all six are B. C increases from zero to two in the first 10 s and from two to six in the next 10 s. The rates are 0.2 and 0.4 particle per second, respectively.

Question 4

B to C preserves the combined count, so X stays at six while the mixture changes. Y drops from 12 to six, showing that B declines from six to zero while C rises.