

Challenge 2: 1. Le Chatelier's principle

The reaction **2 A(*aq*) ⇆ 2 B(*aq*)** is at equilibrium, with $[A]_e$ = 0.100 M and $[B]_e$ = 2.00 M and so K = 400.

Then **0.50 M of B is added**. We know $[A]_e$ will change to a value **greater than 0.100 M** and that $[B]_e$ will change to a value **between 2.00 M and 2.50 M**.

Find the new values of $[A]_e$ and $[B]_e$.

Answer: $[A]_e$ = 0.124 M and $[B]_e$ = 2.48 M

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Challenge 2: 2. Le Chatelier's principle

The reaction **2 A(*aq*) ⇆ 2 B(*aq*)** is at equilibrium, with $[A]_e$ = 0.100 M and $[B]_e$ = 2.00 M and so K = 400.

Then **0.100 M of A is added**. We know $[A]_e$ will change to a value **between 0.100 M and 0.200 M** and that $[B]_e$ will change to a value **greater than 2.00 M**.

Find the new values of $[A]_e$ and $[B]_e$.

Answer: $[A]_e$ = 0.105 M and $[B]_e$ = 2.10 M

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