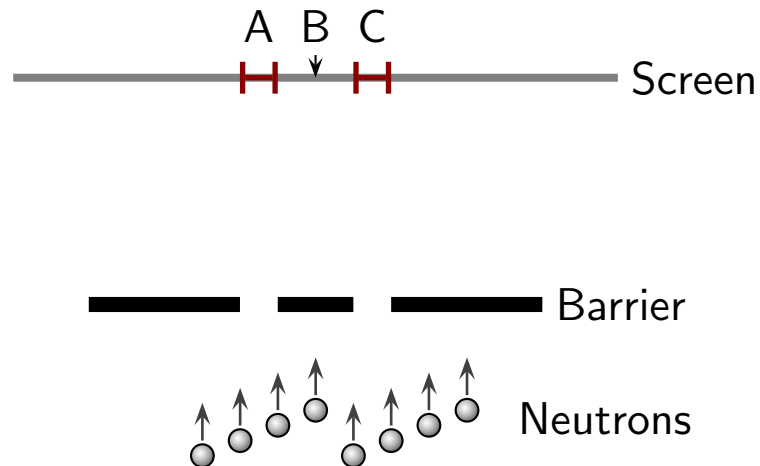


Question 1

Neutrons are fired, one at a time toward a barrier that contains two openings. They approach the barrier in the illustrated direction. Those that pass through the openings travel toward a screen where they can be detected.

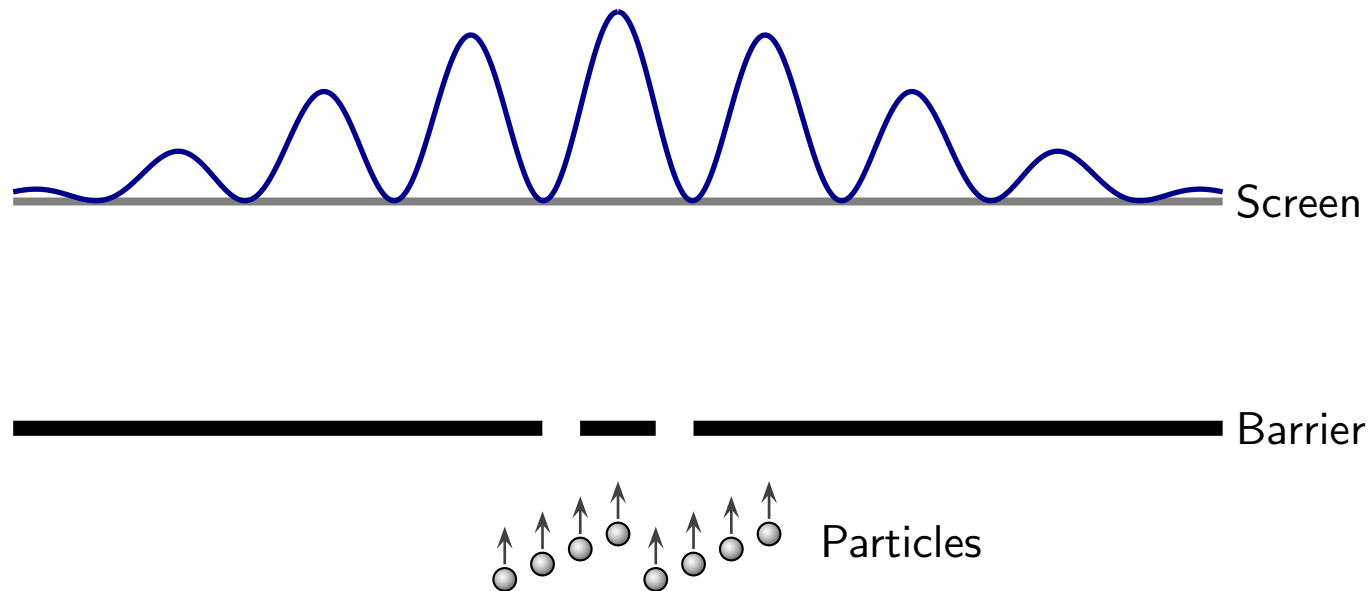


Where on the screen will each neutron arrive?

1. Always at or close to A.
2. Always at or close to C.
3. Sometimes at or close to A, other times at or close to C.
4. Almost anywhere.

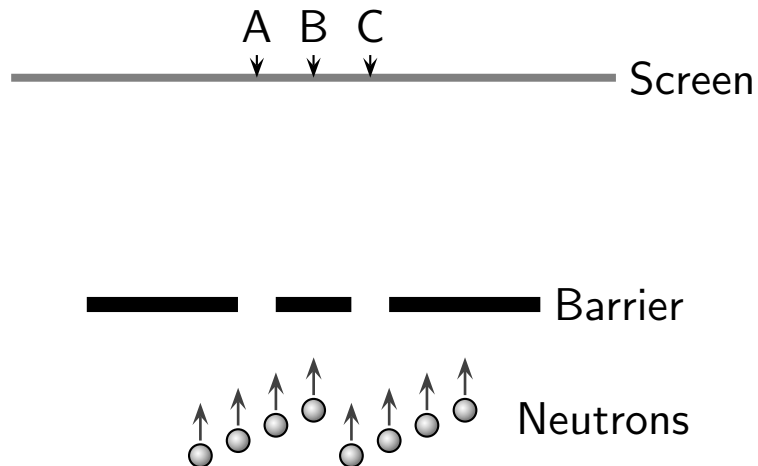
Particles Passing Through Double Slits

Probability of arrival of particles at various screen locations.



Question 2

Neutrons are fired, one at a time toward a barrier that contains two openings. They approach the barrier in the illustrated direction. Those that pass through the openings travel toward a screen where they can be detected.

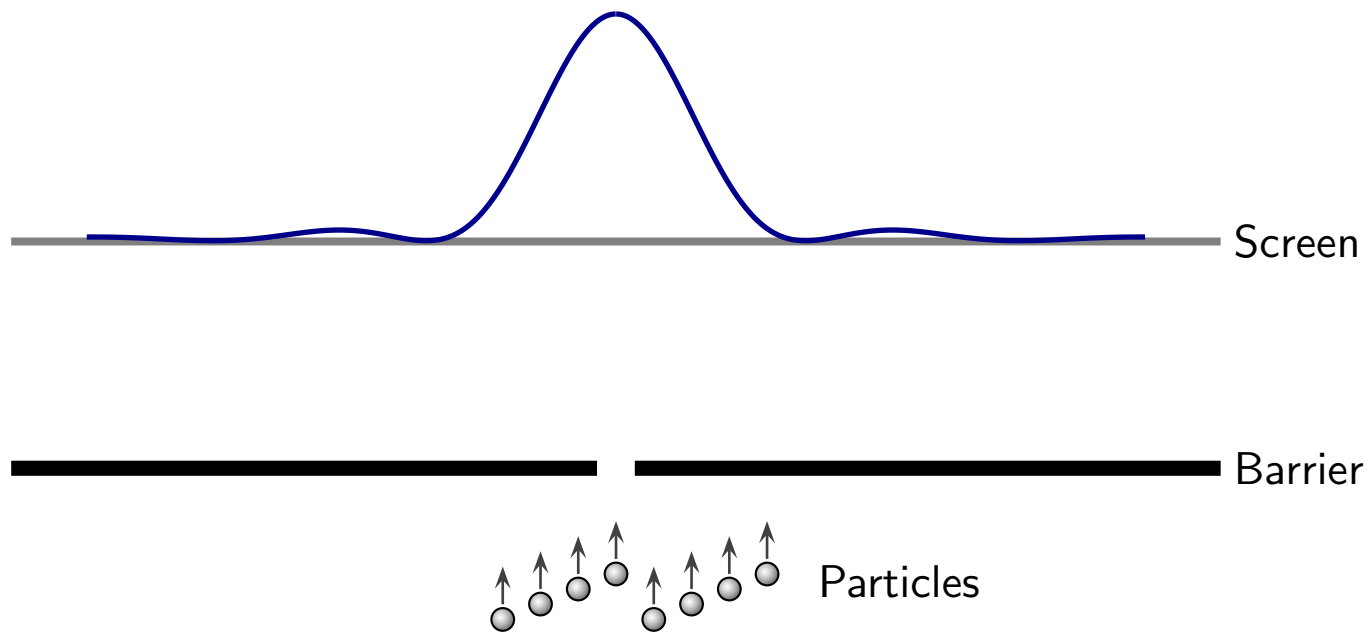


Out of the three indicated locations on the screen, where is each neutron *most likely* to arrive?

1. At A.
2. At B.
3. At C.
4. At A or C. Both are equally likely.
5. All three are equally likely.

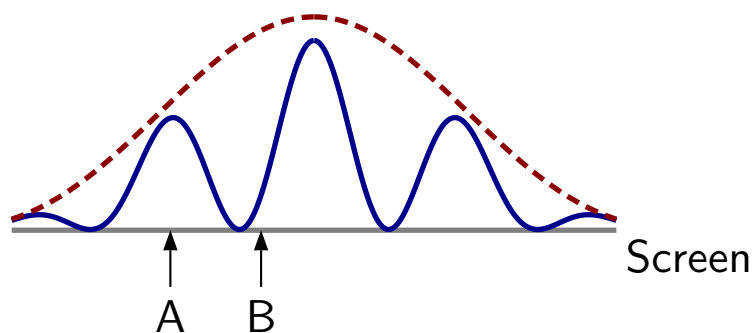
Particles Passing Through A Single Slit

Probability of arrival of particles at various screen locations.



Question 3

Many neutrons are fired toward a barrier/slit arrangement and arrive at a screen. The probability distribution for arrival at various locations depends on the barrier/slit arrangement. A double slit produces the solid dark blue probability distribution. A single slit produces the dashed dark red distribution.

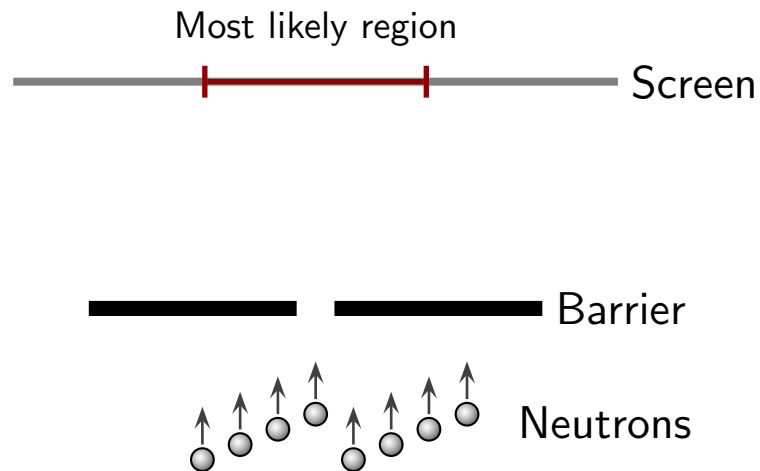


Which of the following is true?

1. Single slit \Rightarrow more arrive at A than B.
Double slit \Rightarrow more arrive at A than B.
2. Single slit \Rightarrow more arrive at B than A.
Double slit \Rightarrow more arrive at A than B.
3. Single slit \Rightarrow more arrive at B than A.
Double slit \Rightarrow more arrive at B than A.
4. Single slit \Rightarrow more arrive at A than B.
Double slit \Rightarrow more arrive at B than A.

Question 4

Neutrons are fired, one at a time toward a barrier that contains one opening. They approach the barrier in the illustrated direction. The majority of the neutrons that pass through the opening arrive in the indicated region.



The width of the opening is reduced. What happens to the most likely region?

1. It expands.
2. It shrinks.
3. It stays the same.

Particles Passing Through Single Slits with Different Widths

Probability of arrival of particles at various screen locations.

