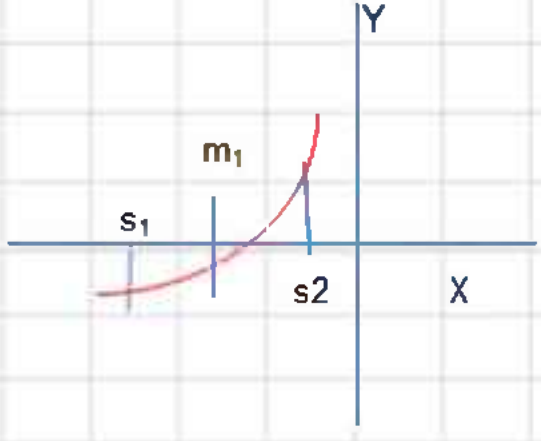
Real Function

Rational Function + Irrational Function

Finding a root of a real function

Midpoint Method

One method of finding root for real value (rational or irrational) is to use
Midpoint method. Find two points around a root.
s1 and s2 are both sides of a root as shown in the graph.



Find midpoint by $m_1 = (s_1 + s_2)/2$

If m_1 is on the same side as s_1, m_1 becomes new s_1

If it is another way around. m_1 becomes new s_2

By repeating this process

We find the value that is very close to the root.

This method does not work at the singular point because the function is (1) discontinued, (2) not smooth, (3) it is Max point.
Select the correct answer and type the number below.