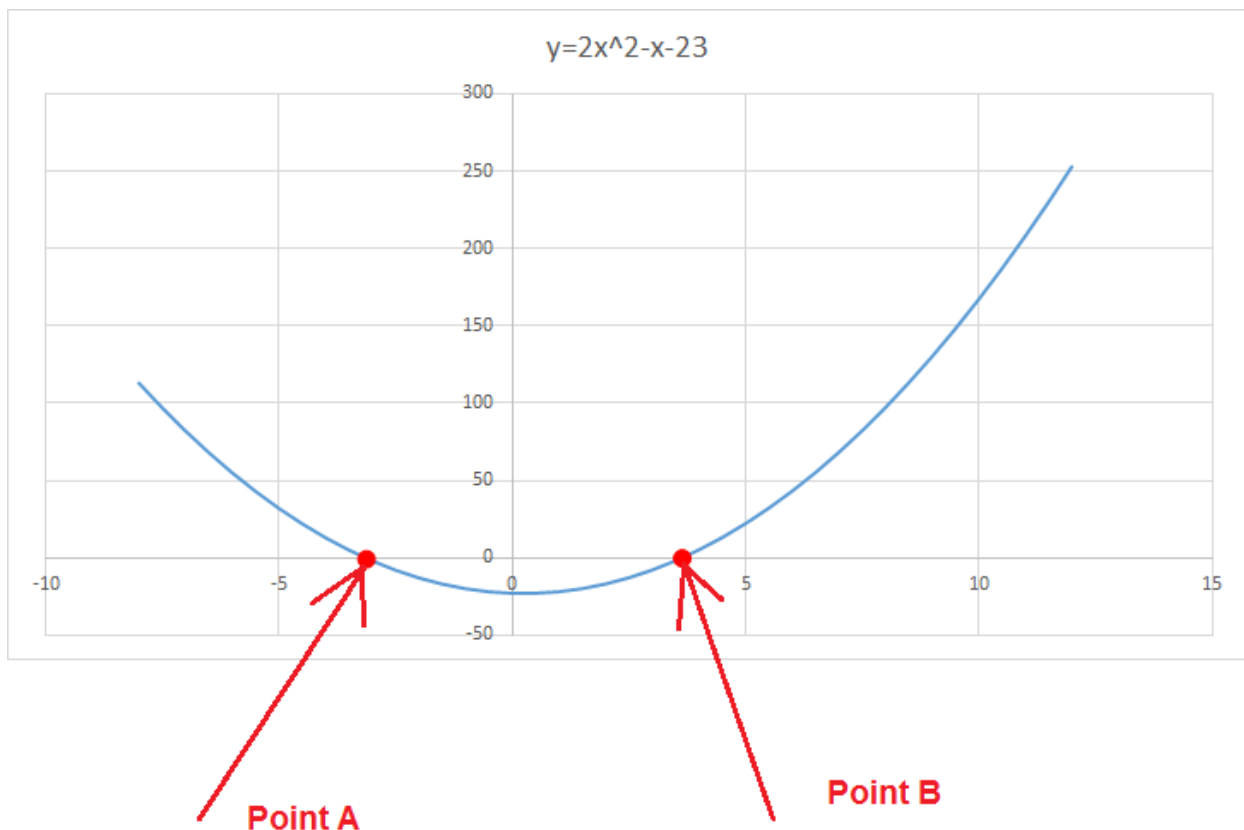Tim has drawn the graph of

$$y = 2x^2 - x - 23$$

What line should be drawn on the graph to solve the equation

$$x^2 - x - 12 = 0$$

SOLUTION

Tim has drawn the graph of

$$y = 2x^2 - x - 23$$

y=2x^2-x-23

Point A

Point B

You can see the result of Tim's work. He did this in order to solve equation

$$2x^2 - x - 23 = 0$$

X-coordinates of the points of intersection of the graph and the Ox axis are solutions of the given equation.

$$\begin{cases} Point\ A: x = \dfrac{1}{4} - \dfrac{\sqrt{185}}{4} \approx -3.15 \\ Point\ B: x = \dfrac{1}{4} + \dfrac{\sqrt{185}}{4} \approx 3.65 \end{cases}$$
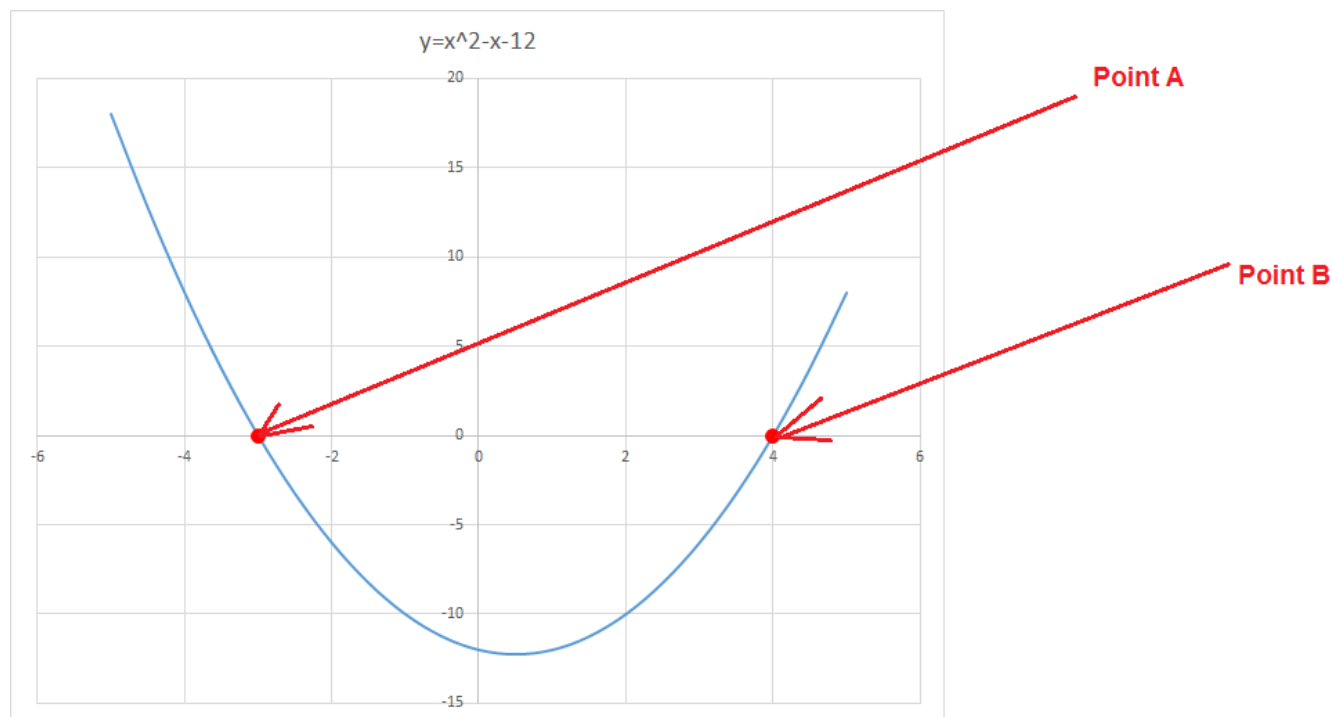
In order to solve equation

$$x^2 - x - 12 = 0$$

Tim needed to build a graph of the function

$$y = x^2 - x - 12$$

and determine the coordinates of the intersection points

y=x^2-x-12

Point A

Point B

X-coordinates of the points of intersection of the graph and the Ox axis are solutions of the given equation.

$$\begin{cases} Point\ A\!: x = -3 \\ Point\ B\!: x = 4 \end{cases}$$