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Rutherford Sodays Law Test.

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DAY - MONDAY

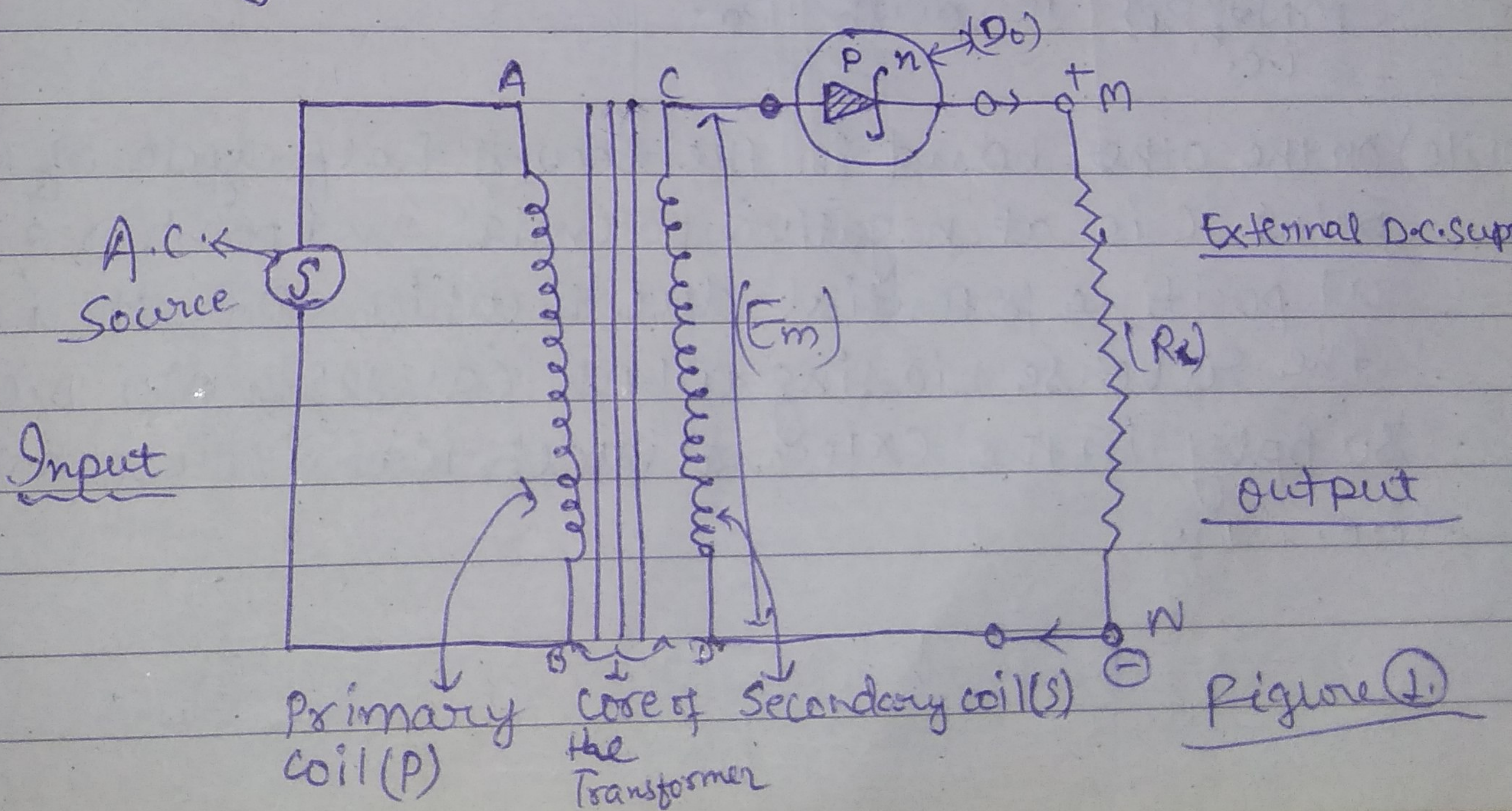
Qⁿ. What is a rectifier?

Ans → The rectifier is an electronic device which converts ~~an~~ alternating current (A.C) into Direct current (D.C). Its action is called rectification. The P-n junction diode or the semi-conductor diode is a good rectifier.

Qⁿ Use the P-n junction diode or the semi-conductor diode as the half-wave rectifier.

Ans → (A) Electrical circuit connection :-

For the half wave rectification a single P-n junction diode or a semi-conductor diode (D_o) is used. The electrical circuit is connected as shown in the following figure (1).



$D_o \Rightarrow$ P-n junction diode
 $R_L =$ load resistance

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The given A.C. source (S) is connected b/w points A and B of the primary coil (P) of the transformer. C point of its secondary coil (S) is connected to P-type semi-conductor of D_o , while its D point is connected to N-type semi-conductor of D_o through the external D.C. supply MN ~~(R_L)~~ (R_L) in the figure (1).

(B) Action (working) :-

In the first half cycle of A.C., point C is at positive potential and point D is at negative potential. due to which the P-n junction diode or the semi-conductor diode (D_o) acts in the forward biasing. which causes a D.C. supply in the external electrical circuit MN ~~(R_L)~~ through D_o .
i.e.

while) on the other hand in the second half cycle of A.C. point C is at negative potential and point D is at positive potential. due to which D_o acts in the reverse biasing which causes a NO D.C. supply in the external electrical circuit MN (i.e. R_L).

As a result of which, there is a discontinuous D.C. supply in the external electric circuit mn (i.e. PR_1) and the action of the P-N junction diode is just like a half wave rectifier. as in the following figures (2) & (3).

1. wave forms :-

~~2. wave forms :-~~

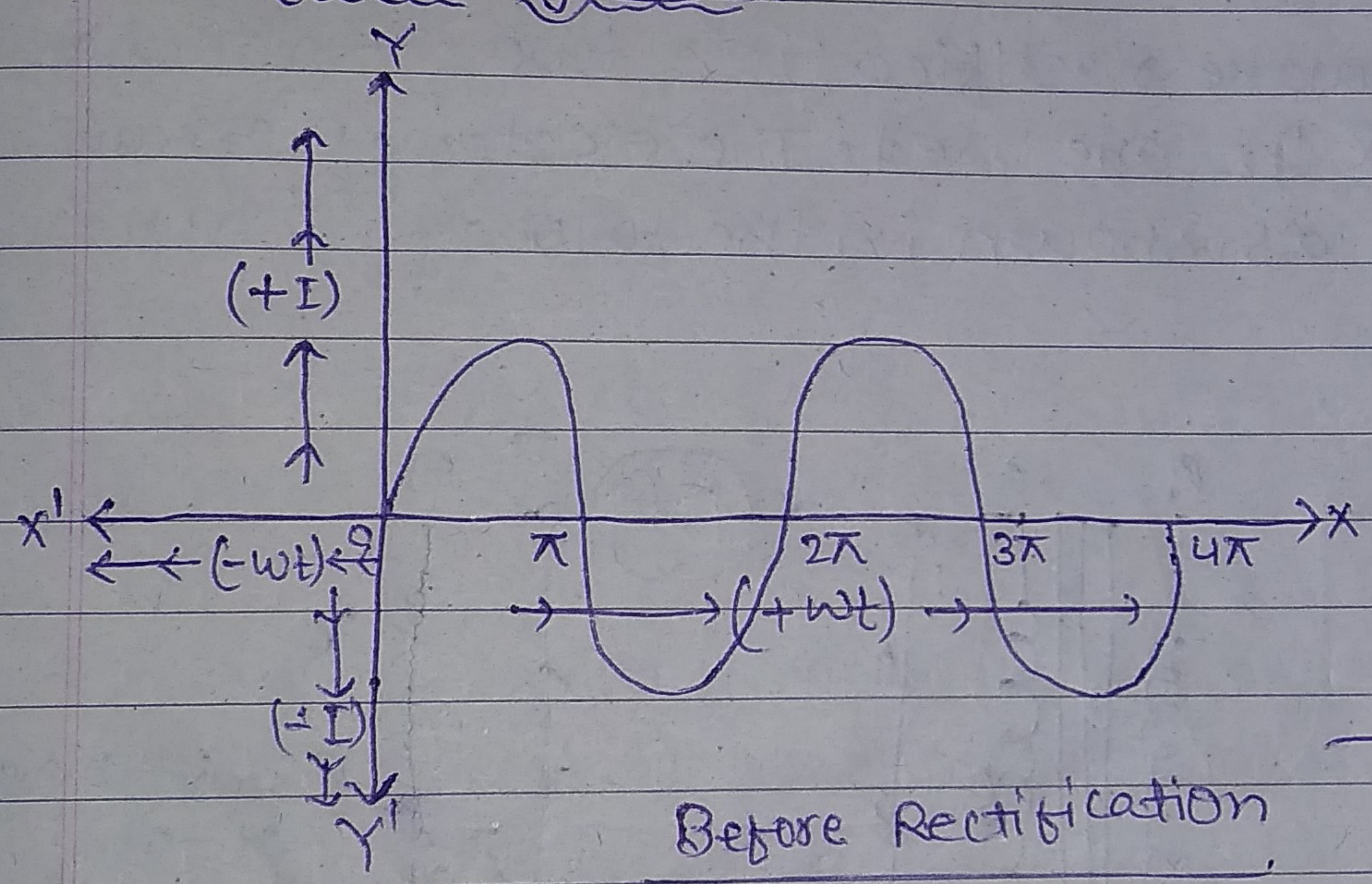


Figure (2)

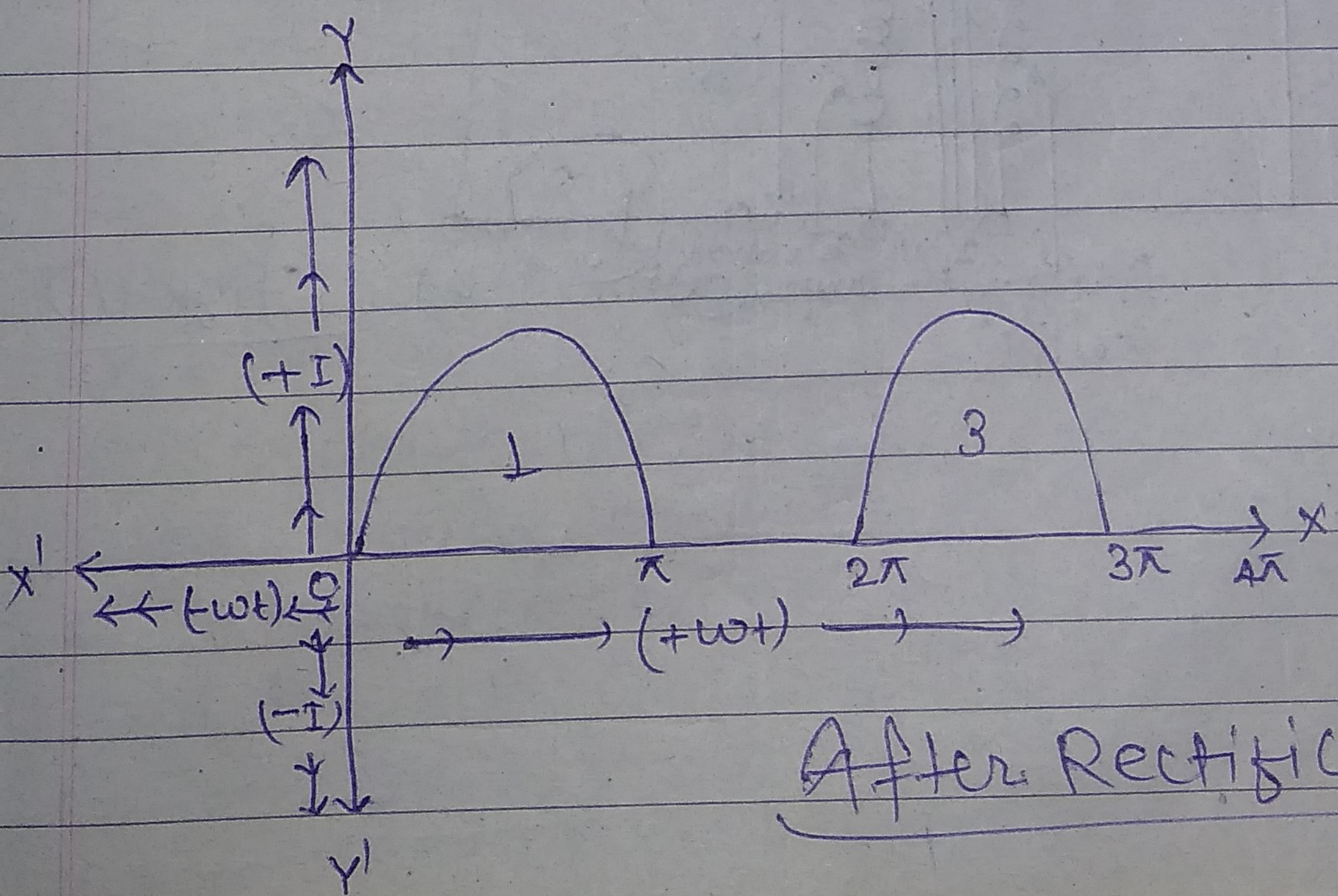


Figure (3)

After Rectification