

Cambridge International AS & A Level

Mathematics

9709/32

Paper 3 Pure Mathematics 3

May/June 2024

Question No (1)

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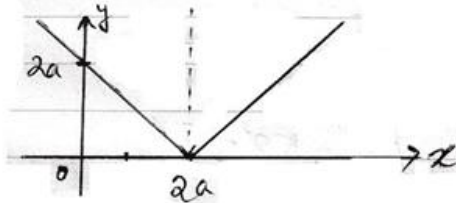
(a) Sketch the graph of $y = |x - 2a|$, where a is a positive constant.

(b) Solve the inequality $2x - 3a < |x - 2a|$

Solution:

(a)

As a is positive and value of y becomes zero when $x = 2a$, and due to modulus all value of y will be +ve.



(b) solve the inequality $2x - 3a < |x - 2a|$

solution

$$2x - 3a < |x - 2a|$$

$$2x - 3a < -(x - 2a)$$

$$2x - 3a < -x + 2a$$

$$2x + x < 3a + 2a$$

$$3x < 5a$$

$$x < \frac{5}{3}a$$

$$2x - 3a < (x - 2a)$$

$$2x - 3a < x - 2a$$

$$2x - x < 3a - 2a$$

$$x < a$$

ignore as
least x is $2a$

