

Topical Revision Paper 6

Term 2 Unit 6: Modulus Functions

Question 1:

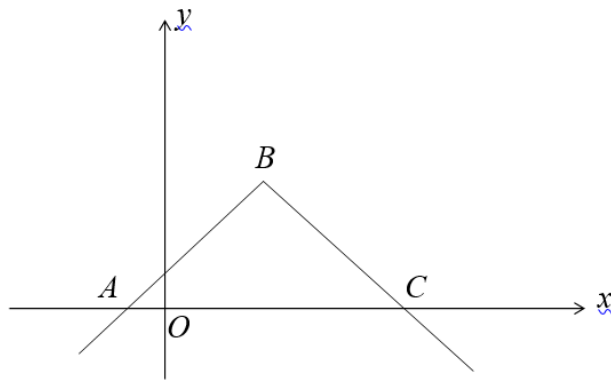
Sketch the graph $y = |x - 3| - a$ where $0 < a < 3$, showing clearly the intercepts with the axes. [3]

Question 2:

Sketch the graphs of $y = |x - 2|$ and $y = |x^2 - 3x - 4|$ for the domain $-2 \leq x \leq 5$ on the same axes and hence state the number of solutions of the equation $|x - 2| = |x^2 - 3x - 4|$. [5]

Answer : No. of solutions = 4

Question 3:



The diagram shows part of the graph of $y = 4 - |2x - 3|$.

(i) Find the coordinates of the points A , B and C . [4]

(ii) Solve the inequality $4 - |2x - 3| < x - 2$. [3]

Answer :

(i) $B (\frac{3}{2}, 4)$, $A (-\frac{1}{2}, 0)$, $C (3\frac{1}{2}, 0)$ (ii) $x < -3$ or $x > 3$

Question 5:

Sketch the graphs of $2y = |x - 2|$ and $y = x + 2$ for $-3 \leq x \leq 3$. Hence, or otherwise, solve the equation $\left| \frac{x - 2}{2} \right| > x + 2$. [5]

Answer : $x > -\frac{2}{3}$

