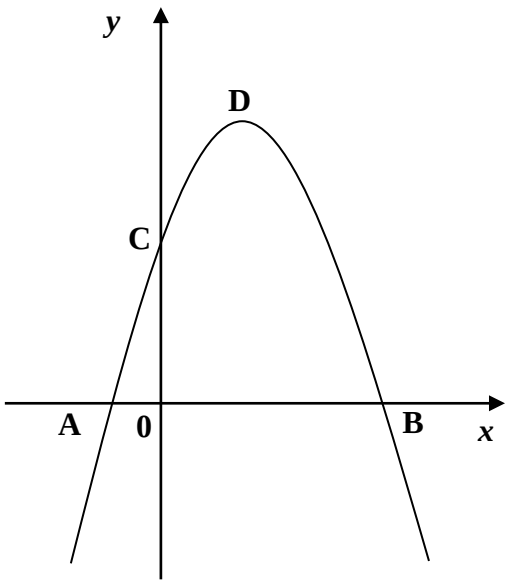
1. Solve the equation $4x(x - 2) = 7$, giving your answer correct to 1 decimal place. **(5)**

2.



The graph shows the parabola $y = 16 + 6x - x^2$.

Find the coordinates of A, B, C and D.

(6)

3. Use the discriminant to determine the nature of the roots of these quadratic equations.

(a) $x^2 - 6x + 8 = 0$ **(b)** $4x^2 + x + 3 = 0$ **(5)**

Answers

4.	$4x^2 - 8x - 7$	*1*	
	substituting into quadratic formula	*1*	
	discriminant = 176	*1*	
	first solution 2·7	*1*	
	second solution –0·7	*1*	**[5 marks]**
5.	$16 + 6x - x^2 = 0$	*1*	
	$(8 - x)(2 + x) = 0$	*1*	
	A(– 2, 0);B(8, 0)	*1*	
	$16 + 6(0) - (0)^2 = 16$ C(0, 16)	*1*	
	D(3, ?)	*1*	
	$16 + 6(3) - 2^2 = 25$ D(3, 25)	*1*	**[6 marks]**
6.	**(a)** discrimant = 4	*1*	
	roots are real	*1*	
	roots are rational	*1*	
	(b) discrimant = – 47	*1*	
	roots are non – real	*1*	**[5 marks]**