

6. Let $f(x) = \sqrt{x}$, and $g(x) = 2^x$. Solve the equation
 $(f^{-1} \circ g)(x) = 0.25$.

Working:

$f(x) = \sqrt{x}$	$(f^{-1} \circ g)(x)$
$y = \sqrt{x}$	$f^{-1}(g(x))$
<u>inverse</u> $(\sqrt{y})^2 = x$	$f^{-1}(2^x)$
$x^2 = y$	

Answers:
 $X = -1$

(Total 4 marks)

$f^{-1}(x) = x^2$

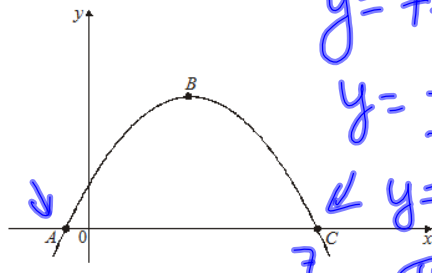
$(2^x)^2$
 $\sqrt{(2^x)^2} = \sqrt{\frac{1}{4}}$

$2^x = \frac{1}{2}$

$X = -1$

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7. The diagram shows the parabola $y = (7-x)(1+x)$. The points A and C are the x -intercepts and the point B is the maximum point.



$y = 7 + 7x - 1x - x^2$

$y = -x^2 + 6x + 7$

$y = -1(x^2 - 6x + 9) + 7 + 9$

$y = -1(x-3)^2 + 16$

Find the coordinates of A , B and C and rewrite the equation in vertex form

Working:

$0 = (7-x)(1+x)$

$0 = 7-x \quad | \quad x+1=0$

$x=7 \quad | \quad x=-1$

$C(7,0) \quad A(-1,0)$

vertex $B(3,16)$

Answers:

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