

BE-PRECALC | WEDNESDAY 9-23-09

ACT
1 min
Key ① The determinant of a matrix
 $\begin{bmatrix} a & b \\ c & d \end{bmatrix}$ equals $ad - cb$.

WHAT MUST BE THE VALUE OF
 x FOR THE MATRIX $\begin{bmatrix} x & 8 \\ x & x \end{bmatrix}$ TO
HAVE A DETERMINANT OF -16 ?

ANS

$$x^2 - 8x = -16$$

$$x^2 - 8x + 16 = 0$$

$$\text{sum} \Rightarrow -8$$

$$\text{prod} \Rightarrow 16$$

$$\begin{array}{c} \diagup \quad \diagdown \\ -4 \quad -4 \end{array}$$

$$(x-4)(x-4) = 0 \quad \therefore \boxed{x=4}$$

• CONTINUE PRACTICE FACTORING QUADRATIC EQUATIONS.