

Answer:

Creating Eigen vectors for T

Det(T-Λ) = Det = 0

(6- Λ)\*( 3- Λ) + 2 = 0

18 - 9Λ + Λˆ2 + 2= 0

Λˆ2 - 9Λ + 20 = 0

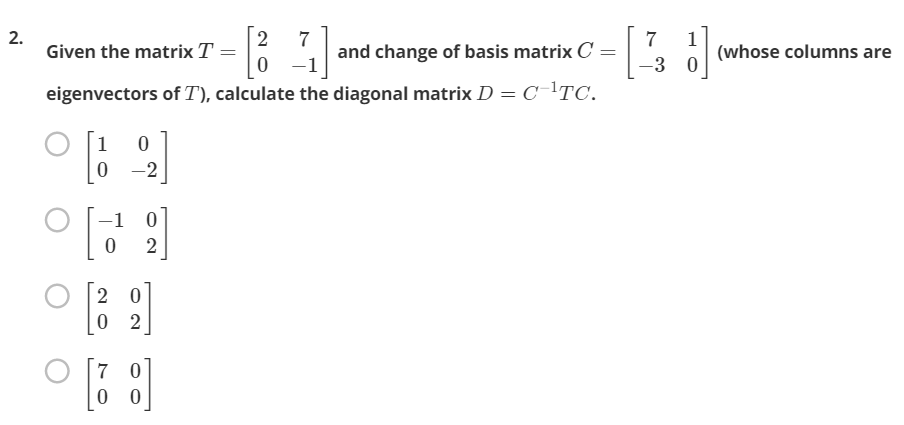
(Λ-5) \* (Λ-4) = 0

Substituting Λ1=5 in T,

Which implies, X1 = X2, Hence Eigen value Λ=5 is for Eigen vector

The other Eigen value is Λ2=4.

Answer is



We need Eigen values for Eigen Basis vectors

Det(T-Λ) = Det = 0

(2- Λ)\*( -1- Λ) + 0 = 0

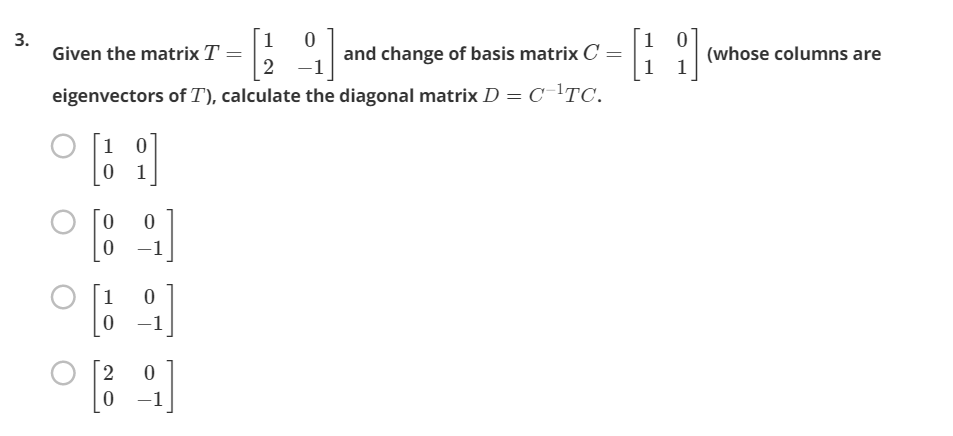
(2 - Λ) \* (-1 - Λ) = 0

Substituting Λ1 = 2 in T,

Which implies, X2 = 0, Hence Eigen value Λ1 = 2 is for Eigen vector

The other Eigen value is Λ2 = -1.

Answer is =



We need Eigen values for Eigen Basis vectors

Det(T-Λ) = Det = 0

(1- Λ) \* ( -1- Λ) + 0 = 0

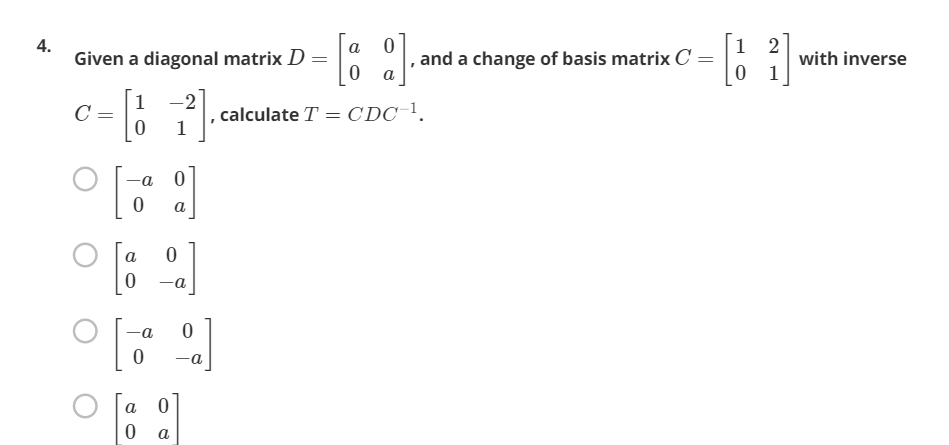
(1 - Λ) \* (-1 - Λ) = 0

Substituting Λ1 = 1 in T,

Which implies, X1 = X2, Hence Eigen value Λ1 = 1 is for Eigen vector

The other Eigen value is Λ2 = -1.

Answer is =

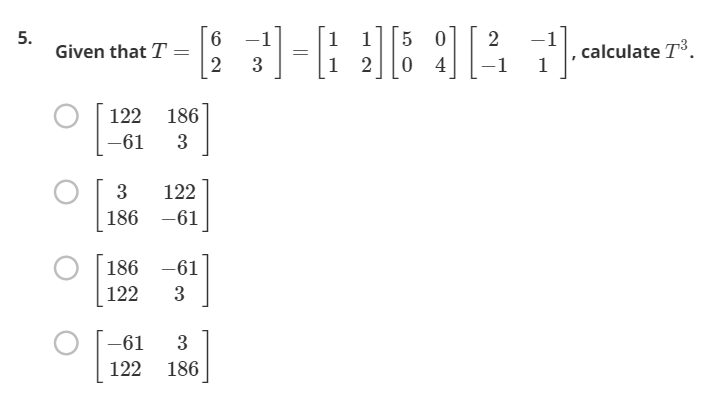


T = CDC­-1 =

=

= aCC­-1 = aI = a

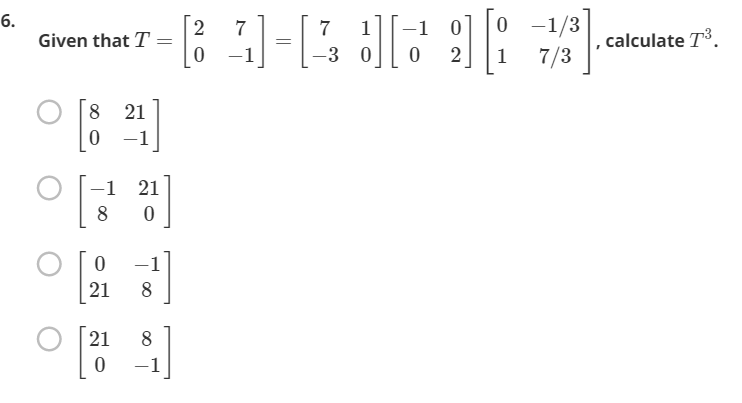
Answer is



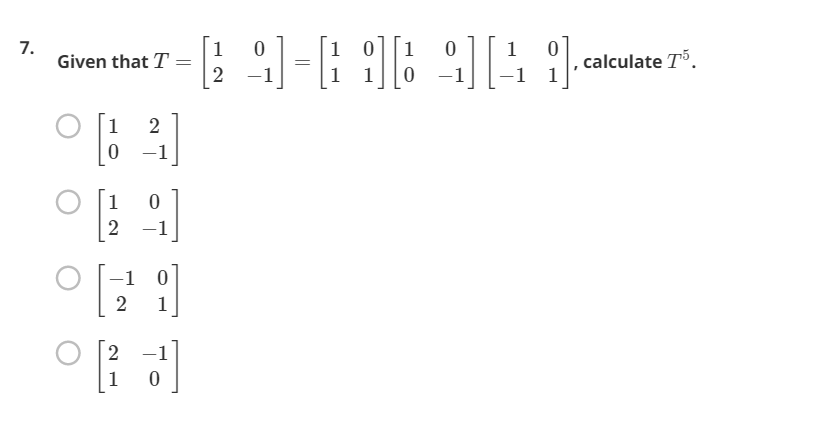
T = CDC­-1

T3 = CD3C­-1 =

=



T3 = CD3C-1 =

= 

T5 = CD5C-1

Here D5 = D and Hence T5 = T =