

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

R

R

R

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2. C

e

X

X

=

=

3. H
i

If

d

⇒ A

de

de

de

7. Let A be a 4

$$= \det ($$

$$= c$$

8. If $A = \begin{pmatrix} k & 3 \\ 0 & 1 \end{pmatrix}$

$$|AA^T| = |$$

$$|A^T A| = \begin{vmatrix} k & 3 \\ 3 & 1 \end{vmatrix}$$

$$= k^2(10)$$

$$= k^2$$

$$\Rightarrow n$$

9. Let

(a)

$$\underline{A}$$

(b)

$$\underline{v} =$$

$$-50$$

$$-10 +$$

1

(c)

$$d =$$

=

3

10. Find the e

$$\underline{N} = \langle 1$$

$$= \langle$$

use

$$-3x$$



11. Prove: I
is equal

$$\checkmark =$$

0

1

11

12. Simplify

$$= 11$$

$$11 = 11$$

13. Consider the lines $\begin{cases} x = 1 + 2t \\ y = 3 - t \\ z = -1 + t \end{cases}$

(a) Find the points in each

$$\vec{PQ} = \langle -1 + 2t, \dots \rangle$$

$$\begin{cases} \vec{PQ} \cdot \underline{v}_1 = 0 \\ \vec{PQ} \cdot \underline{v}_2 = 0 \end{cases} \Rightarrow \begin{cases} -1 + 2t = 0 \\ 2(-1 + t) = 0 \end{cases}$$

\Rightarrow

$$\therefore P = (2 + \dots)$$

$$\text{and } Q = (1 + 2t, \dots)$$

(b) Find the shortest distance

$$d = \|\vec{PQ}\| = \sqrt{\dots}$$

$$= \sqrt{\dots}$$

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18. Is this set of n
exhibit one of

by inspection

=

19. Let $A = \begin{pmatrix} 1 & 1 & 2 \\ -2 & -1 & 1 \\ 3 & 2 & 1 \\ 4 & 2 & -2 \end{pmatrix}$

$$Ax = 0.$$

$$\begin{pmatrix} 1 & 1 & 2 \\ -2 & -1 & 1 \\ 3 & 2 & 1 \\ 4 & 2 & -2 \end{pmatrix}$$

$$\begin{array}{l} R_1 - R_2 \\ R_3 + R_2 \\ R_4 + 2R_2 \end{array} \rightarrow \begin{pmatrix} 1 \\ 0 \\ 0 \\ 0 \end{pmatrix}$$

and a basis

a

