	new	gray	sweatshirt	red	jeans	york
A	1	1	1	0	0	0
B.	1	0	0	1	1	0
C.	1	0	0	0	0	1

1. norm $A = \sqrt{1^2+1^2+1^2+0^2+0^2+0^2} = \sqrt{3}$ ✓

norm $B = \sqrt{1^2+0^2+0^2+1^2+1^2+0^2} = \sqrt{3}$ ✓

norm $C = \sqrt{1^2+0^2+0^2+0^2+0^2+1^2} = \sqrt{2}$ ✓

2. Distance $(A,B) = \sqrt{(1-1)^2+(1-0)^2+(1-0)^2+(0-1)^2+(0-1)^2+(0-0)^2} = 2$ ✓

Distance $(B,C) = \sqrt{(1-1)^2+(0-0)^2+(0-0)^2+(1-0)^2+(1-0)^2+(0-1)^2} = \sqrt{3}$ ✓

Distance $(A,C) = \sqrt{(1-1)^2+(1-0)^2+(1-0)^2+(0-0)^2+(0-0)^2+(0-1)^2} = \sqrt{3}$ ✓

3. $\cos(A,B) = \frac{1\times1}{\sqrt{3}\times\sqrt{3}} = \frac{1}{3}$ ✓

$\cos(A,C) = \frac{1\times1}{\sqrt{3}\times\sqrt{2}} = \frac{1}{\sqrt{6}}$ ✓ 2/2

$\cos(B,C) = \frac{1\times1}{\sqrt{3}\times\sqrt{2}} = \frac{1}{\sqrt{6}}$ ✓

cosine

4. ✓ distance of C&D would be 0. because they would be regarded as the same ~~docu~~(vectorizer) documentation and cosine similarity would be 1. Cosine distance = 1 − cosine similarity.