

Computer Graphics Quiz #1

Your Name: _____

1. What is the dimension of the following column matrix? $(1.34, 0.0, -0.912, 8.23)^T$

- a. 1 b. 2 c. 3 d. 4

2. Are the following two column matrices equal? $(1.0, 2.0, -1.0)^T$, $(1, 2, -1)$

- a. No, because one contains ints and the other reals. b. No, because a column matrix can't be equal to a row matrix. c. Yes.

3. Say that point A is $x=1, y=12$ and that point B is $x=3, y=15$. What column matrix represents the displacement from A to B?

- a. $(2, 3)^T$ b. $(-2, -3)^T$ c. $(4, 27)^T$ d. $(4, 3)^T$

4. Say that point C is $x=4, y=2, z=-3$ and that point D is $x=8, y=7, z=4$. What column matrix represents the displacement from C to D?

- a. $(12, 9, 1)^T$ b. $(4, 5, -7)^T$ c. $(-4, -5, 7)^T$ d. $(4, 5, 7)^T$

5. What is the sum: $(8, 4, 6)^T + (2, -2, 9)^T$?

- a. $(10, 2, 15)^T$ b. $(7, 6, 3)^T$ c. $(8, 4, 6, 2, -2, 9)^T$ d. 27

6. What is: $(7, -4, 12)^T - (-3, -2, 9)^T$?

- a. $(4, -6, 3)^T$ b. $(-4, 2, -3)^T$ c. $(10, -2, 3)^T$ d. $(10, 2, -3)$

7. Say that: $\mathbf{a} = (x, -2, 3)^T$, $\mathbf{b} = (4, x, z)^T$, and that $\mathbf{c} = (y, 0, y)^T$. What must x, y, and z be so that $\mathbf{a} + \mathbf{b} + \mathbf{c} = \mathbf{0}$?

- a. $x = 2, y = 2, z = 2$ b. $x = -2, y = 2, z = 1$ c. $x = -2, y = -2, z = -1$ d. $x = 2, y = -6, z = 3$

8. Here is a formula, where \mathbf{u} , \mathbf{v} , and \mathbf{w} are vectors: $|\mathbf{u} + \mathbf{v}| \text{ ??? } |\mathbf{u}| + |\mathbf{v}|$ What symbol should replace the ???

- a. == b. /= c. <= d. >=

9. Which ONE of the following operations is NOT possible?

- a. point + vector b. vector - vector c. point + point d. point - point

10. What is the length of the vector represented by $(4, 4, 2)^T$?

a. 3

b. 4

c. 5

d. 6