

MATH 241 – Individual Quiz 1

Your Name: _____

- This quiz must be completed during class time and is closed book, closed notes. You are not allowed to discuss with others. Please turn in solutions to all of these.
- In order to get full credit, please write all your work, not just the final answer.

1. (3 points) Describe in words the following subset of \mathbf{R}^3 :

$$\{(x, y, z) \mid x - z = 2\}.$$

2. (3 points) Find the vector of length 3 in the direction of $\mathbf{v} = \langle 4, 3, 1 \rangle$.

3. (4 points) Let $\mathbf{v} = \overrightarrow{AB}$ and $\mathbf{w} = \overrightarrow{AC}$, where A, B, C are three distinct points in the plane. Match (a) - (d) with (i) - (iv). (Hint: Draw a picture.)

(a) \mathbf{w}	(b) $-\mathbf{v}$	(c) $\mathbf{w} - \mathbf{v}$	(d) $\mathbf{v} - \mathbf{w}$
(i) \overrightarrow{CB}	(ii) \overrightarrow{CA}	(iii) \overrightarrow{BC}	(iv) \overrightarrow{BA}

Bonus Problem: (2 points) If A, B and C are the vertices of triangle, what is $\overrightarrow{AB} + \overrightarrow{BC} + \overrightarrow{CA}$?