Math 3 Vectors Components

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Assignment

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1.) $z_1 = 5\bar{i} - 2\bar{j}$ | $z_2 = 3\bar{i} + 3\bar{j}$ | $z_3 = 4\bar{i} - 1\bar{j}$

a.) $z_1 + z_2 + z_3 = (5\bar{i} - 2\bar{j}) + (3\bar{i} + 3\bar{j}) + (4\bar{i} - 1\bar{j})$

$= (5 + 3 + 4) + (-2 + 3 + -1)$

$= 12$

b.) $z_1 - z_2 - z_3 = (5\bar{i} - 2\bar{j}) \ (3\bar{i} + 3\bar{j}) \ (4\bar{i} - 1\bar{j})$ 33,33

$= (5 - 3 - 4) \ (-2 - 3 + 1)$

$= -2\bar{i} - 4\bar{j}$

2.) $OB - OA = (6\bar{i} - 2\bar{j}) - (4\bar{i} + 3\bar{j})$

$OB - OA = 2\bar{i} - 5\bar{j} = -2\bar{i} + 5\bar{j}$

$\overrightarrow{AB} = \sqrt{-2^2 + 5^2}$

$\overrightarrow{AB} = \sqrt{29}$

$OC - OB = (2\bar{i} - \bar{j}) - (6\bar{i} - 2\bar{j})$

$OC - OB = -4\bar{i} + \bar{j}$

$\overrightarrow{BC} = \sqrt{-4^2 + 1^2}$ 20

$\overrightarrow{BC} = \sqrt{17}$

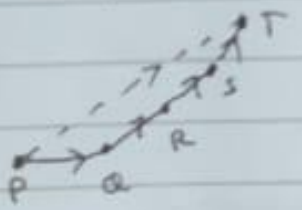
$OA - OC = (4,1 + 3\bar{j}) - (2\bar{i} - \bar{j})$

$OA - OC = 2\bar{i} + 4\bar{j}$

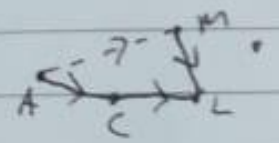
$\overrightarrow{CA} = \sqrt{2^2 + 4^2}$

$\overrightarrow{CA} = \sqrt{20}$

3.) a.) $\overrightarrow{PQ} + \overrightarrow{QR} + \overrightarrow{RS} + \overrightarrow{ST} = PT$ 33,33



b.) $\overrightarrow{AC} + \overrightarrow{CL} - \overrightarrow{ML} = AM$



c. $\overrightarrow{GH} + \overrightarrow{HJ} + \overrightarrow{JK} + \overrightarrow{KL} + \overrightarrow{LG} = 0$

d. $\overrightarrow{AB} + \overrightarrow{BC} + \overrightarrow{CD} + \overrightarrow{DB} =$