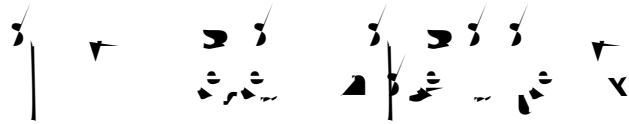




# **New York State Testing Program**



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 JEFFREY A. MATTESON

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**It is important to read all of Steps One–Five and the pertinent grade-level information in Step Six prior to administering the test.**

**Test booklets and scoring materials must be kept secure. You are not to discuss the test, show it to anyone, or photocopy the materials, as the security of the test could be breached. However, school personnel may make photocopies of this *Teacher's Directions* if additional copies are needed.**

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Paper-Based Testing Dates	April 10–12, 2024*
Paper-Based Testing Make-up Dates	April 15–17, 2024**

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**No one, under any circumstances, including the student, may alter the student's responses on the test once the student has handed in their test materials. Teachers and administrators who engage in inappropriate conduct with respect to administering and scoring State assessments may be subject to disciplinary actions in accordance with Sections 3020 and 3020-a of Education Law or to action against their certification pursuant to Part 83 of the Regulations of the Commissioner of Education.**



## Unauthorized Materials

518-474-1989







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$\vec{r}_1 = x_1 \hat{i} + y_1 \hat{j} + z_1 \hat{k}$  و  $\vec{r}_2 = x_2 \hat{i} + y_2 \hat{j} + z_2 \hat{k}$  را در نظر بگیرید. بردار  $\vec{r}$  را که از مبدأ به نقطه  $(x, y, z)$  اشاره می‌کند، می‌توانیم به صورت  $\vec{r} = x \hat{i} + y \hat{j} + z \hat{k}$  بنویسیم. اگر  $\vec{r}_1$  و  $\vec{r}_2$  بردارهای موازی با  $\vec{r}$  باشند، یعنی  $\vec{r}_1 = \lambda \vec{r}$  و  $\vec{r}_2 = \mu \vec{r}$ ، آنگاه  $\vec{r}_1 \cdot \vec{r}_2 = \lambda \mu (\vec{r} \cdot \vec{r}) = \lambda \mu (x^2 + y^2 + z^2)$  خواهیم داشت.

R  $\vec{r}_1 \cdot \vec{r}_2 = \lambda \mu (x^2 + y^2 + z^2)$

در این مسئله،  $\vec{r}_1 = 3\hat{i} + 4\hat{j} + 5\hat{k}$  و  $\vec{r}_2 = 1\hat{i} + 2\hat{j} + 3\hat{k}$  داده شده است. با مقایسه با  $\vec{r} = x\hat{i} + y\hat{j} + z\hat{k}$ ، داریم  $\lambda = 3$  و  $\mu = 1$ . بنابراین  $\vec{r}_1 \cdot \vec{r}_2 = 3 \cdot 1 \cdot (x^2 + y^2 + z^2) = 3(x^2 + y^2 + z^2)$  خواهد بود.

اگر  $\vec{r}_1$  و  $\vec{r}_2$  بردارهای عمود بر هم باشند، یعنی  $\vec{r}_1 \cdot \vec{r}_2 = 0$ ، آنگاه  $3(x^2 + y^2 + z^2) = 0$  خواهیم داشت. این معادله تنها در صورتی برقرار است که  $x = y = z = 0$ ، یعنی  $\vec{r} = \vec{0}$ .

D  $\vec{r}_1 \cdot \vec{r}_2 = 0$

در این مسئله،  $\vec{r}_1 = 1\hat{i} + 2\hat{j} + 3\hat{k}$  و  $\vec{r}_2 = 4\hat{i} + 5\hat{j} + 6\hat{k}$  داده شده است. با مقایسه با  $\vec{r} = x\hat{i} + y\hat{j} + z\hat{k}$ ، داریم  $\lambda = 1$  و  $\mu = 4$ . بنابراین  $\vec{r}_1 \cdot \vec{r}_2 = 1 \cdot 4 \cdot (x^2 + y^2 + z^2) = 4(x^2 + y^2 + z^2)$  خواهد بود.

اگر  $\vec{r}_1$  و  $\vec{r}_2$  بردارهای عمود بر هم باشند، یعنی  $\vec{r}_1 \cdot \vec{r}_2 = 0$ ، آنگاه  $4(x^2 + y^2 + z^2) = 0$  خواهیم داشت. این معادله تنها در صورتی برقرار است که  $x = y = z = 0$ ، یعنی  $\vec{r} = \vec{0}$ .

P  $\vec{r}_1 \cdot \vec{r}_2 = \lambda \mu (x^2 + y^2 + z^2)$

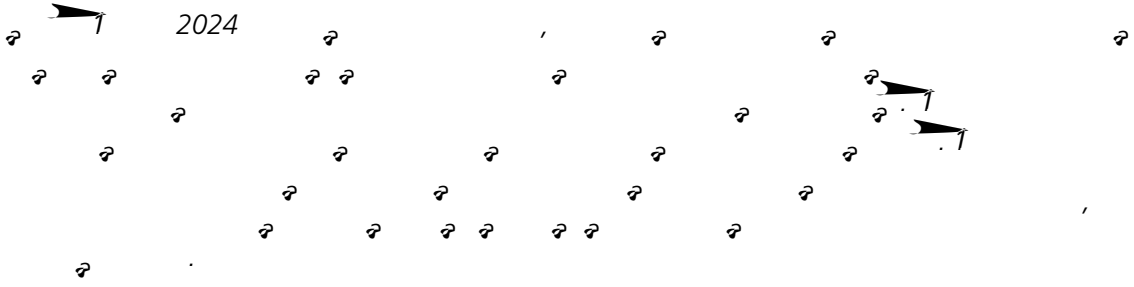
در این مسئله،  $\vec{r}_1 = 1\hat{i} + 2\hat{j} + 3\hat{k}$  و  $\vec{r}_2 = 4\hat{i} + 5\hat{j} + 6\hat{k}$  داده شده است. با مقایسه با  $\vec{r} = x\hat{i} + y\hat{j} + z\hat{k}$ ، داریم  $\lambda = 1$  و  $\mu = 4$ . بنابراین  $\vec{r}_1 \cdot \vec{r}_2 = 1 \cdot 4 \cdot (x^2 + y^2 + z^2) = 4(x^2 + y^2 + z^2)$  خواهد بود.



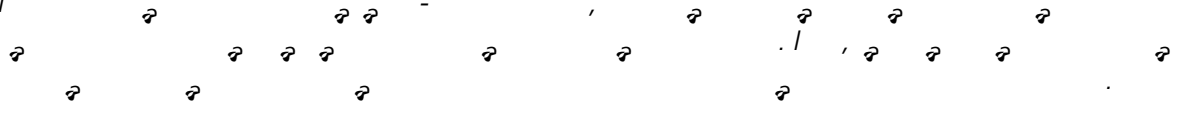




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Grade 4 — Day 1, Session 1

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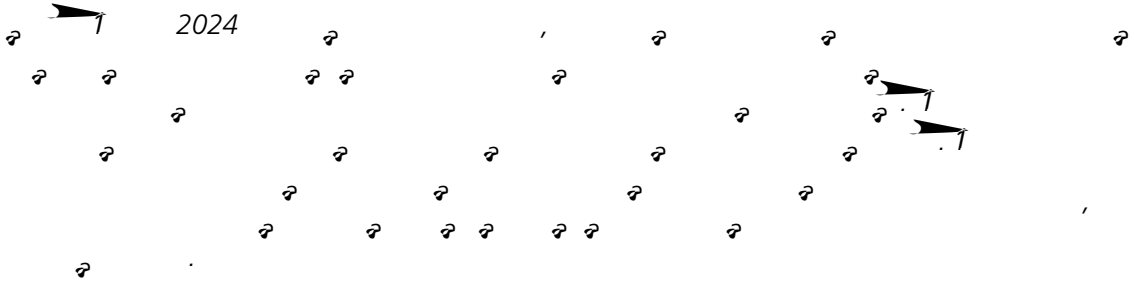
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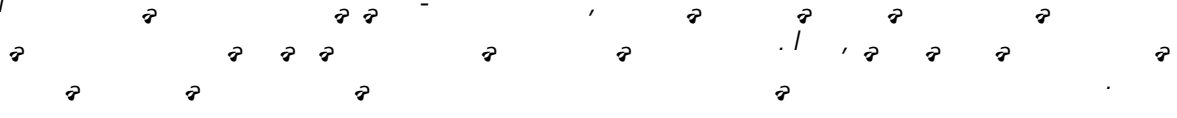




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