Algebraic Reasoning

Unit 5, Bundle 1 Summative Assessment

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. The matrix shows the average revenue collected over the course of a month at the Preakness Amusement Park for selling corndogs, popcorn, and soda on Saturdays and Sundays. What are the dimensions of the matrix? (AR.5)

$$Average Revenue at Preakness Amusement Park$$

$$\begin{matrix}\\Saturday\\Sunday\end{matrix}\left[\begin{matrix}corndogs&popcorn&soda\\\$675&\$425&\$1,290\\\$850&\$712&\$1,545\end{matrix}\right]$$

* 1. $3×2$
	2. $3×4$
	3. $2×3$
	4. $4×3$
1. Given matrix $M=\left[\begin{matrix}3&-5&\begin{matrix}8&12\end{matrix}\\0&11&\begin{matrix}7&-3\end{matrix}\\-4&9&\begin{matrix}-2&0\end{matrix}\end{matrix}\right]$, which entries have a sum less than -8? (AR.5A)
2. $m\_{1,2} and m\_{3,1}$
3. $m\_{3,1} and m\_{3,3}$
4. $m\_{3,1} and m\_{2,4}$
5. $m\_{2,1} and m\_{1,2}$
6. Using the matrices $\left[A\right], \left[B\right], and \left[C\right]$, determine which statement is NOT true. (AR.5A)

$$\left[A\right]=\left[\begin{matrix}9&-3\\-7&0\end{matrix}\right]; \left[B\right]=\left[\begin{matrix}-2&4\\-3&7\end{matrix}\right]; \left[C\right]=\left[\begin{matrix}-13&11\\1&14\end{matrix}\right]$$

* 1. $\left[A\right]-\left[B\right]=\left[B\right]-\left[C\right]$
	2. $\left[C\right]+\left[A\right]=\left[A\right]+\left[C\right]$
	3. $\left[A\right]-\left[B\right]=\left[B\right]-\left[A\right]$
	4. $\left[A\right]+\left[B\right]=\left[B\right]+\left[A\right]$
1. The matrices below represent the attendance at two performances of a school play on both Saturday and Sunday by children (*c*), adults (*a*), and seniors (*s*). (AR.5A)

Matrix A

Saturday attendance: $\begin{matrix}\\matinee\\evening\end{matrix}\begin{matrix}c&a&s\\\left[\begin{matrix}27\\12\end{matrix}\right.&\begin{matrix}75\\120\end{matrix}&\left.\begin{matrix}40\\22\end{matrix}\right]\end{matrix}$

Matrix B

Sunday attendance: $\begin{matrix}\\matinee\\evening\end{matrix}\begin{matrix}c&a&s\\\left[\begin{matrix}18\\5\end{matrix}\right.&\begin{matrix}42\\85\end{matrix}&\left.\begin{matrix}27\\67\end{matrix}\right]\end{matrix}$

If matrix *C* represents the combined attendance for both Saturday and Sunday, what would the entry $c\_{2,1}$ represent?

1. A total of 62 children attended the play.
2. A total of 322 adults attended the play.
3. A total of 177 adults attended the play during the matinees.
4. **A total of 17 children attended the play during the evenings.**