



ACTIVITY 3

MATHia CONNECTION

- Solving Linear Systems Using Linear Combinations
- Solving Linear Systems Using Any Method

Applying the Linear Combinations Method

HABITS OF MIND

- Model with mathematics.
- Use appropriate tools strategically.

Let's use the linear combinations method to solve a problem.

Let It Snow Resort offers two winter specials: the Get-Away Special and the Extended Stay Special. The Get-Away Special offers two nights of lodging and four meals for \$270. The Extended Stay Special offers three nights of lodging and eight meals for \$435. Determine what Let It Snow charges per night of lodging and per meal.

- 1 Write the system of linear questions that represents the problem situation. Let n represent the cost for one night of lodging at the resort and m represent the cost for each meal. Write the equations in standard form.
- 2 How are these equations the same? How are these equations different?
- 3 Solve the system comparing the two winter specials.



ACTIVITY 3 Continued

4 Interpret the solution of the linear system in the problem situation.

5 Check your solution algebraically.

6 Is the Extended Stay Special the better deal? **Explain why or why not.**



SUMMARY You can represent a situation with a system of equations, solve it using the linear combinations method, and interpret the solution in context.

Chunking the Activity

▶ Read and discuss the situation

▶ Group students to complete 1

▶ Check-in and share

▶ Group students to complete 2 – 6

▶ Share and summarize

Student Look-Fors

A classroom environment where students are mindful of classmates' perspectives, cultures, and experiences.



ACTIVITY 3

MATH^{IA} CONNECTION

- Solving Linear Systems Using Linear Combinations
- Solving Linear Systems Using Any Method

Systems of Equations and Inequalities

TOPIC 3

LESSON 2

Getting Started

1

2

3

4

Activity

Talk the Talk

Applying the Linear Combinations Method

HABITS OF MIND

- Model with mathematics.
- Use appropriate tools strategically.

Let's use the linear combinations method to solve a problem.

Let It Snow Resort offers two winter specials: the Get-Away Special and the Extended Stay Special. The Get-Away Special offers two nights of lodging and four meals for \$270. The Extended Stay Special offers three nights of lodging and eight meals for \$435. Determine what Let It Snow charges per night of lodging and per meal.

- Write the system of linear questions that represents the problem situation. Let n represent the cost for one night of lodging at the resort and m represent the cost for each meal. Write the equations in standard form.

$$\begin{cases} 2n + 4m = 270 \\ 3n + 8m = 435 \end{cases}$$

- How are these equations the same? How are these equations different?

Both equations are written in standard form.

The coefficients of n and m are different.

- Solve the system comparing the two winter specials.

$$n = 105, m = 15$$

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Topic 3 ▶ Systems of Equations and Inequalities

Questions to Support Discourse

	TYPE
<ol style="list-style-type: none"> <ul style="list-style-type: none"> Is it more efficient to eliminate a specific variable? Why? How did you solve for the first variable? The second variable? 	Probing

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ACTIVITY 3 Continued

- 4 Interpret the solution of the linear system in the problem situation.

Let It Snow Resort charges \$105 per night of lodging and \$15 per meal.

- 5 Check your solution algebraically.

$$2n + 2m = 270 \qquad 3n + 8m = 435$$

$$2(105) + 4(15) = 270 \qquad 3(105) + 8(15) = 435$$

$$210 + 60 = 270 \qquad 315 + 120 = 435$$

$$270 = 270 \qquad 435 = 435$$

- 6 Is the Extended Stay Special the better deal? Explain why or why not.

No. Let It Snow Resort charges the same amount for meals and lodging for both specials.

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