

7. Evaluate each expression by replacing x with 4.

a) $x + 5$

b) $3x$

c) $2x - 1$

d) $\frac{x}{2}$

e) $3x + 1$

f) $20 - 2x$

8. Evaluate each expression by replacing z with 7.

a) $z + 12$

b) $10 - z$

c) $5z$

d) $3z - 3$

e) $35 - 2z$

f) $3 + \frac{z}{7}$

9. **Assessment Focus** Jason works at a local fish and chips restaurant.

He earns \$7/h during the week, and \$9/h on the weekend.

a) Jason works 8 h during the week and 12 h on the weekend.

Write an expression for his earnings.

b) Jason works x hours during the week and 5 h on the weekend.

Write an expression for his earnings.

c) Jason needs \$115 to buy sports equipment.

He worked 5 h on the weekend.

How many hours does Jason have to work during the week to have the money he needs?



10. **Take It Further** A value of n is substituted in each expression to get the number in the box.

Find each value of n .

a) $5n$

30

b) $3n - 1$

11

c) $4n + 7$

15

d) $5n - 4$

11

e) $4 + 6n$

40

f) $\frac{n}{8}$

5

Reflect

Explain why it is important to use the order of operations when evaluating an algebraic expression.

Use an example in your explanation.

6. Koko is organizing an overnight camping trip. The cost to rent a campsite is \$20. The cost of food is \$9 per person.
- How much will the trip cost if 5 people go? 10 people go?
 - Write a relation for the cost of the trip when p people go.
 - Suppose the cost of food doubles.
Write a relation for the total cost of the trip for p people.
 - Suppose the cost of the campsite doubles.
Write a relation for the total cost of the trip for p people.
 - Explain why using the variable p is helpful.



7. **Assessment Focus** A pizza with cheese and tomato toppings costs \$8.00. It costs \$1 for each extra topping.
- Write a relation for the cost of a pizza with e extra toppings.
 - What is the cost of a pizza with 5 extra toppings?
 - On Tuesdays, the cost of the same pizza with cheese and tomato toppings is \$5.00. Write a relation for the cost of a pizza with e extra toppings on Tuesdays.
 - What is the cost of a pizza with 5 extra toppings on Tuesdays?
 - How much is saved by buying the pizza on Tuesday?



8. Write a relation for the pattern rule for each number pattern.
Let n represent any term number.
- 4, 8, 12, 16, ...
 - 7, 8, 9, 10, ...
 - 0, 1, 2, 3, ...

9. **Take It Further**

- For each number pattern, how is each term related to the term number?
- Let n represent any term number. Write a relation for the term.

a)	Term Number	1	2	3	4	5	6
	Term	3	5	7	9	11	13
b)	Term Number	3	4	5	6	7	8
	Term	7	10	13	16	19	22
c)	Term Number	2	3	4	5	6	7
	Term	5	9	13	17	21	25

Reflect

How did your knowledge of patterning help you in this lesson?