Practice

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

a)

Term Number	1	2	3	4	5	6
Term	2	4	6	8	10	12

2 2 2 2 2 ← Numerical Coefficient.

i) the term is two times the term number.

ii) $2n$

b)

Term Number	1	2	3	4	5	6
Term	3	4	5	6	7	8

1 1 1 1 1 ← N.C. $1n = n$

i) the term is two more than the term.

ii) $n+2$

c)

Term Number	1	2	3	4	5	6
Term	8	16	24	32	40	48

i) the term is eight times the term number.

ii) $8n$

d)

Term Number	1	2	3	4	5	6
Term	6	7	8	9	10	11

1 1 1

i) the term is five more than the term number.

ii) $n+5$

2. There are n students in a class. Write a relation for each statement.

a) the total number of pencils, if each student has three pencils

$3n$

b) the total number of desks, if there are two more desks than students

$n + 2$

c) the total number of geoboards, if each pair of students shares one geoboard

$\frac{n}{2}$

d) the total number of stickers, if each student gets four stickers and there are ten stickers left over

$4n+10$

3. A person earns $10 for each hour worked.
a) Write a relation for her earnings for n hours of work.
b) How much does she earn for 30 h of work?

a) $10n$

b) $\boxed{n=30}$

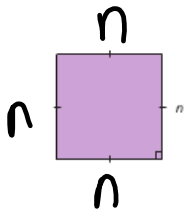
$10n$
$=10(30)$
$=300$ She earned $300.

4. a) Write a relation for the perimeter of a square with side length n centimetres.

$P=n+n+n+n$

$P=4n$ ← equation

$4n$ ← expression



b) What is the perimeter of a square with side length 12 cm?

$P=4(12)$
$=48\text{cm}$

perRIMeter

c) Suggest a situation that could be represented by each relation.
i) $3s$ is related to s ii) $8t$ is related to t

i) the perimeter of an equaliteral triangle.

ii) the perimeter of a regular octogan.

5. Suggest a real-life situation that could be represented by each relation.

a) $n + 5$ is related to n b) $15 + 2p$ is related to p

c) $3t + 1$ is related to t

How do you know each situation fits the relation?

a) number of desks if each student has one and there are five left over.

b) each student brings in $2 and they had $15 at the start.

c) there are three candies for each person with one remainder.

6. Koko is organizing an overnight camping trip. The cost to rent a campsite is $20. The cost of food is $9 per person.

a) How much will the trip cost if 5 people go? 10 people go?

p=5

9x5=45

45+20=$65

p=10

9x10=90

90+20=$110

b) Write a relation for the cost of the trip when p people go.

9p+20

c) Suppose the cost of food doubles.
Write a relation for the total cost of the trip for p people.

18p+20

d) Suppose the cost of the campsite doubles.
Write a relation for the total cost of the trip for p people.

9p+40

e) Explain why using the variable p is helpful.

because p represents people and people starts with P.

7. **Assessment Focus** A pizza with cheese and tomato toppings costs $8.00. It costs $1 for each extra topping.

a) Write a relation for the cost of a pizza with e extra toppings.

$8 + 1e$ $8+e$

b) What is the cost of a pizza with 5 extra toppings?

$e=5$ $8+e$
$=8+5$
$=\$13$

c) 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.

$5+e$

d) What is the cost of a pizza with 5 extra toppings on Tuesdays?

$e=5$ $5+5$
$=\$10$

e) How much is saved by buying the pizza on Tuesday?

$13-10=\$3$

8. Write a relation for the pattern rule for each number pattern. Let n represent any term number.

a) 4, 8, 12, 16, … b) 7, 8, 9, 10, … c) 0, 1, 2, 3, …