

1) What is the fraction for 0.10. Reduce to lowest terms.

2) Where does the decimal go in the answer for the following:

$3.2 \times 0.1 = 0.32$

$\frac{10}{100} = \frac{1}{10}$

3) Where will the decimal be placed in the answer for:

* $53.3 \div 0.1 =$

$2.37 \div 0.1 = \frac{1}{10}$

4) $0.4 \times 0.4 = 0.16$

$533 \div 1 = 533.0$

$23.7 \div 1 = 23.7$

* 5) Algebraic Expression for: double a number, then subtract 7

$2n - 7$

* 6) Evaluate $n = 4$, $7n + 3 =$

7) $(-1) - (+5) = -6$ $7 \times 4 + 3 = 31$

8) What number is divisible by 6? a) 200 b) 202 c) 204

9) Put a digit at the end of this number to make it divisible by 3

321

324

327

10) $\frac{1}{6}$ of 12

2



Where do you place the decimals?

$$\rightarrow 34.47 + 2.13 = 36.6$$

$$\rightarrow 42.2 - 2.84 = 39.36$$

$$\left. \begin{array}{l} 1.34 \times 42 = 56.28 \\ * 426 \times 0.3 = 142.0 \end{array} \right\}$$

4. Which algebraic expression can be used to describe each phrase?
Circle the correct answer.

a) A number decreased by 6

$n - 6$ $6 - n$ $\frac{n}{6}$

b) A number divided by 2

$a + \frac{1}{2}$ $\frac{1}{2} - a$ $\frac{a}{2}$

c) Double a number, then subtract 1.

$2x - 1$ $1 - 2x$ $x^2 - 1$

d) Five less than four times a number

$5 - 4n$ $4n - 5$ $4(n - 5)$

e) Twelve added to twice a number

$2n + 12$ $2(n + 12)$ $12 - 2n$

8. Evaluate each expression by replacing z with 7.

a) $z + 12$

b) $10 - z$

c) $5z$

d) $3z - 3$

e) $35 - 2z$

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

3z

8. d) $3z - 3$

~~$3 \times 7 - 3$~~

$21 - 3$

18

e) $35 - 2z$

$35 - (2 \times 7)$

$35 - (14)$

21

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

$3 + \frac{7}{7}$

$3 + 1$

4

- 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?



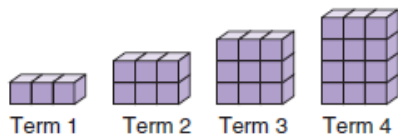
1.4

Relationships in Patterns

Focus Determine a relation to represent a pattern.

Terms and term numbers

Here is a pattern made from linking cubes.



A pattern rule is: Start at 3. Add 3 each time.

This rule relates each term to the term that comes before it.

We can also describe this pattern using the term number.

Term Number	1	2	3	4
Term	3	6	9	12

How does each term relate to the term number?



When we compare or *relate* a variable to an expression that contains the variable, we have a **relation**.

Example

Mr. Prasad plans to hold a party for a group of his friends.

The cost of renting a room is \$35.

The cost of food is \$4 per person.

- Write a relation for the cost of the party, in dollars, for n people.
- How much will a party cost for 10 people?
For 15 people?
- How does the relation change if the cost of food doubles?
How much more would a party for 10 people cost?
How do you know the answer makes sense?



T.#	1	2	3	4	5	6
T	2	4	6	8	10	12

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

$\underline{2n}$

b)

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

$n + 2$

c)

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

$8n$
 ~~$8n$~~

d)

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

$n + 5$

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
 - d) the total number of stickers, if each student gets four stickers and there are ten stickers left over $4n + 10$

p. 23

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?

$$\frac{n}{2}$$

4, a) $10n$
 b) $10n$
 10×30
 $\$300$

4. a) Write a relation for the perimeter of a square with side length n centimetres.
- b) What is the perimeter of a square with side length 12 cm?

$$a) 4n \quad n+n+n+n$$

$$b) 4n \\ 4 \times 12 \\ 48 \text{ cm}$$

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.



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?



$$\begin{array}{l}
 \text{a) } e + 8 \\
 \text{b) } e + 8 \\
 \rightarrow 5 + 8 \\
 \quad \$13 \\
 \text{c) } e + 5 \\
 \text{d) } e + 5 \\
 \quad 5 + 5 \\
 \quad \quad \$10 \\
 \text{e) } 13 - 10 = \$3
 \end{array}$$

p. 24

g. 6 ← exit slip

ques. 9

9. Take It Further

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	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

1p 1 120

****This is a 2 step question!

Be careful about the rule - try at least 3 term numbers to see if you got it!