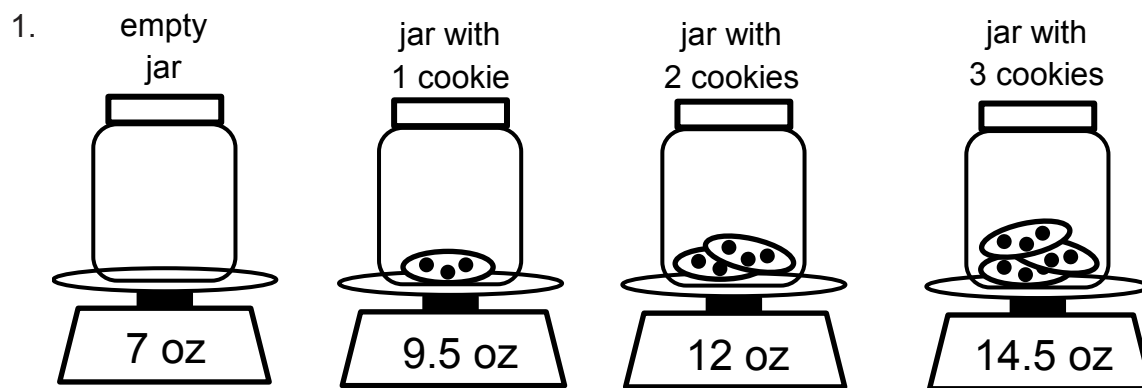
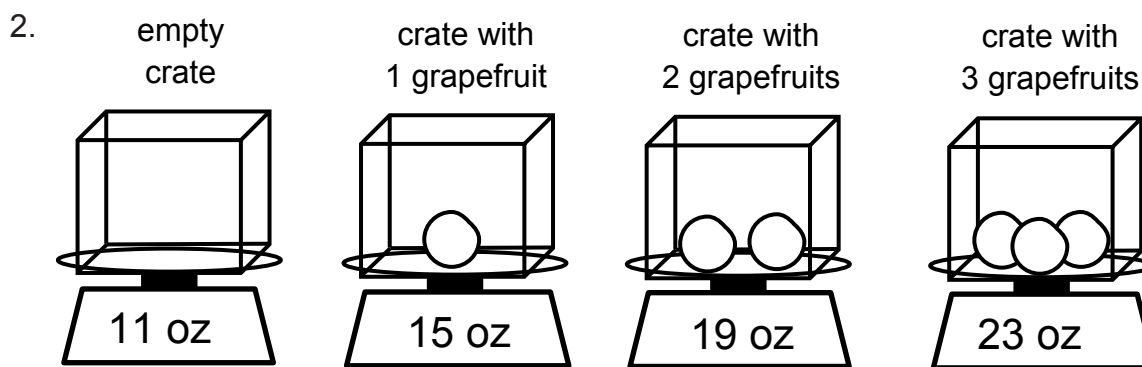


11. Pattern Predictor 3

Complete the table to find the pattern.



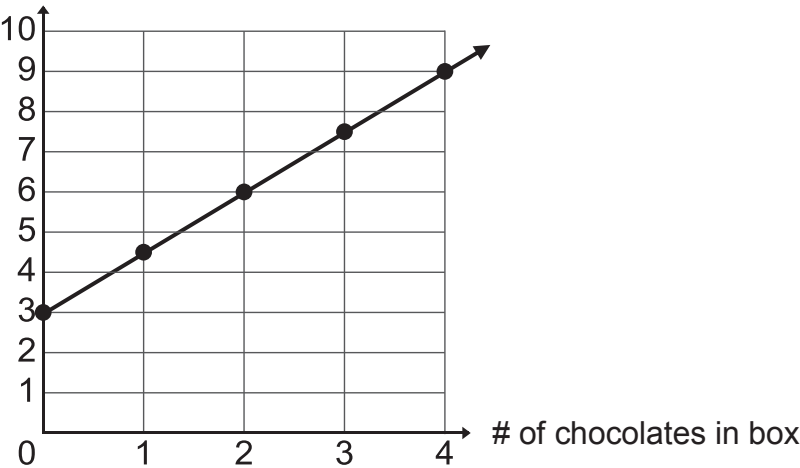
# of cookies	0	1	2	3	4	5	11	20	n
total weight of cookies (oz)	0	2.5	5						
total weight of jar plus cookies (oz)	7	9.5	12						



# of grapefruits	0	1	2	3	4	5	11	20	n
total weight of grapefruits (oz)									
total weight of crate plus grapefruits (oz)									

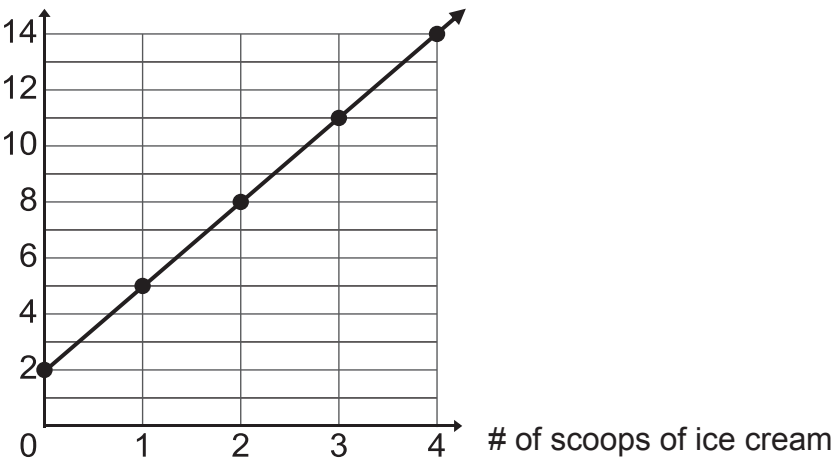
11. Pattern Predictor 3 (continued)

3. total weight of box plus chocolates (oz)



# of chocolates	0	1	2	3	4	5	12	18	<i>n</i>
total weight of chocolates (oz)	0	1.5	3						
total weight of box plus chocolates (oz)	3	4.5	6						

4. total weight of ice cream plus cone (oz)



# of scoops	0	1	2	3	4	5	12	18	<i>n</i>
total weight of ice cream (oz)									
total weight of ice cream plus cone (oz)									

Answers

11. Pattern Predictor 3 (p. 13)

1.	# of cookies	0	1	2	3	4	5	11	20	n
	total weight of cookies (oz)	0	2.5	5	7.5	10	12.5	27.5	50	$2.5n$
	total weight of jar plus cookies (oz)	7	9.5	12	14.5	17	19.5	34.5	57	$7 + 2.5n$

Every time another cookie is added the total weight increases by 2.5 ounces, which means each cookie weighs 2.5 ounces. So 5 cookies weigh $2.5 \cdot 5 = 12.5$ ounces, 11 cookies weigh $2.5 \cdot 11 = 27.5$ ounces, 20 cookies weigh $2.5 \cdot 20 = 50$ ounces, and n cookies weigh $2.5 \cdot n = 2.5n$ ounces. The jar adds 7 ounces to the total weight of the cookies: for example, with 20 cookies the total weight of the jar plus cookies is $7 + 50 = 57$ ounces. So for n cookies the total weight of the jar plus cookies is $7 + 2.5n$ ounces (or $2.5n + 7$ ounces).

2.	# of grapefruits	0	1	2	3	4	5	11	20	n
	total weight of grapefruits (oz)	0	4	8	12	16	20	44	80	$4n$
	total weight of crate plus grapefruits (oz)	11	15	19	23	27	31	55	91	$11 + 4n$

Every time another grapefruit is added the total weight increases by 4 ounces, which means each grapefruit weighs 4 ounces. So 5 grapefruits weigh $4 \cdot 5 = 20$ ounces, 11 grapefruits weigh $4 \cdot 11 = 44$ ounces, 20 grapefruits weigh $4 \cdot 20 = 80$ ounces, and n grapefruits weigh $4 \cdot n = 4n$ ounces. The crate adds 11 ounces to the total weight of the grapefruits: for example, with 20 grapefruits the total weight of the crate plus grapefruits is $11 + 80 = 91$ ounces. So for n grapefruits the total weight of the crate plus grapefruits is $11 + 4n$ ounces (or $4n + 11$ ounces).

3.	# of chocolates	0	1	2	3	4	5	12	18	n
	total weight of chocolates (oz)	0	1.5	3	4.5	6	7.5	18	27	$1.5n$
	total weight of box plus chocolates (oz)	3	4.5	6	7.5	9	10.5	21	30	$3 + 1.5n$

Every time another chocolate is added the total weight increases by 1.5 ounces, which means each chocolate weighs 1.5 ounces. So n chocolates weigh $1.5 \cdot n = 1.5n$ ounces.

The box adds 3 ounces to the total weight of the chocolates. So for n chocolates the total weight of the box plus chocolates is $3 + 1.5n$ ounces (or $1.5n + 3$ ounces).

4.	# of scoops	0	1	2	3	4	5	12	18	n
	total weight of ice cream (oz)	0	3	6	9	12	15	36	54	$3n$
	total weight of ice cream plus cone (oz)	2	5	8	11	14	17	38	56	$2 + 3n$

Every time another scoop is added the total weight increases by 3 ounces, which means each scoop weighs 3 ounces. So n scoops weigh $3 \cdot n = 3n$ ounces. The cone adds 2 ounces to the total weight of the ice cream cone. So for n scoops the total weight of the ice cream cone is $2 + 3n$ ounces (or $3n + 2$ ounces).