Exploring Rules

Find a rule for how these groups of coins change.
Fill in the missing groups of coins.

1

FRONT	BACK
P	P D

2

FRONT	BACK
Q	Q D

3

FRONT	BACK
D	

4

FRONT	BACK
P P	P P D

5

FRONT	BACK
N P	

6

FRONT	BACK
	P Q D

7

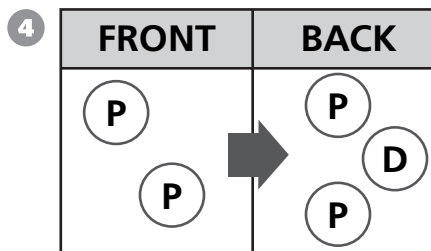| FRONT	BACK
Q N	Q D N

8

FRONT	BACK
	D N D
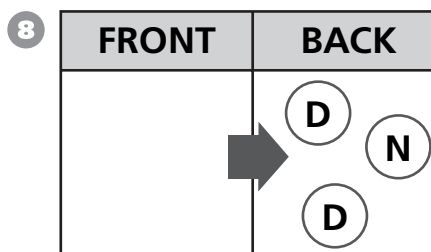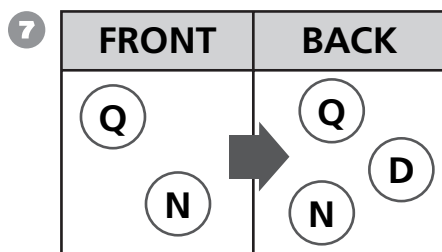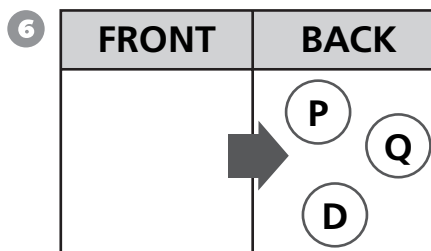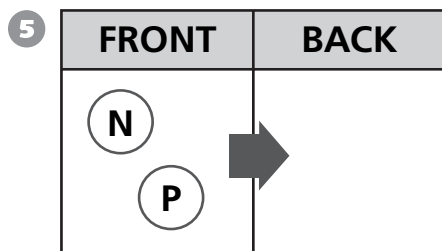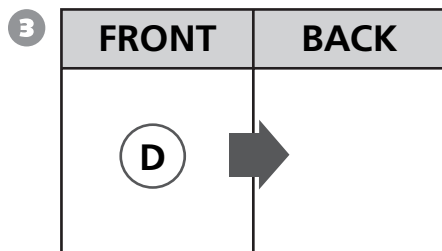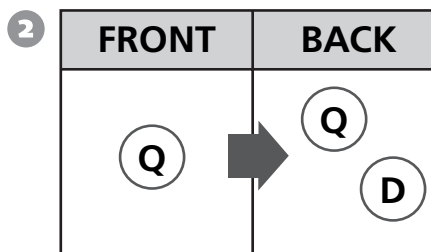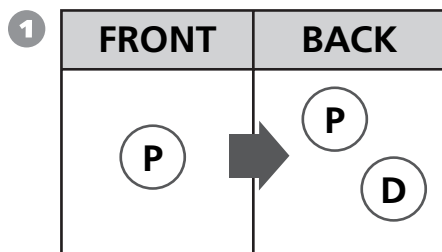
Test Prep

9 There will be 11 people at the pizza party. Each person will have 2 pizza slices. Each pizza is cut into 8 slices. How many pizzas should Melissa order? Explain how you found your answer.

_____

Using Graphs to Find a Rule

1 Complete this set of Find a Rule (FAR) cards.

A

FRONT	BACK
1	21

B

FRONT	BACK
2	22

C

FRONT	BACK
3	23

D

FRONT	BACK
7	

E

FRONT	BACK
10	

F

FRONT	BACK
	29

2 Complete this set of FAR cards.

A

FRONT	BACK
1	6

B

FRONT	BACK
2	

C

FRONT	BACK
3	18

D

FRONT	BACK
	24

E

FRONT	BACK
5	30

F

FRONT	BACK
6	

Test Prep

3 Kyle read 12 pages of his book on Monday, 17 pages on Tuesday, and 13 pages on Wednesday. The book has 57 pages. How many pages must Kyle read on Thursday to finish the book?

A. 5   **C.** 15

B. 12   **D.** 25

4 Lea earned $12.00 doing chores. She bought a toy for $7.00 and a book for $3.00. How much more must she earn to buy a book that costs $6.00?

A. $3.00   **C.** $5.00

B. $4.00   **D.** $6.00

Rules That Use More Than One Input

Complete the table.

1

	INPUTS	RULE 1
A	4, 3	1
B	1, 1	
C	15, 3	12
D	23, 5	18
E	30, 2	
F	24, 12	
G	___, 10	5
H	22, ___	10
I	___, 8	19

2

	INPUTS	RULE 2
A	3, 1	4
B	4, 1	5
C	3, 2	
D	10, 14	24
E	34, 6	
F	17, 5	
G	21, ___	40
H	___, 55	99
I	___, 0	39

Test Prep

3 Jana and Eric collect baseball cards. Jana had
83 cards and gave away 29. Eric had 37 cards
and bought 24 more. Who has more cards now?
How many more? Explain your answer.

_____

_____

_____

Finding Rules with Parts and Wholes
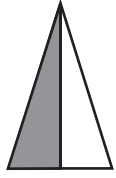
Complete the set of Find a Rule cards.

1

FRONT	BACK
	Rule A $\dfrac{\mathbf{2}}{\mathbf{6}}$ Rule B

2
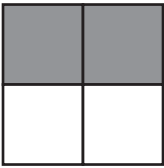
FRONT	BACK
	Rule A $\dfrac{\quad}{\quad}$ Rule B
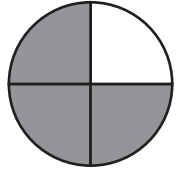
3

FRONT	BACK
	Rule A $\dfrac{\mathbf{1}}{\quad}$ Rule B

4

FRONT	BACK
	Rule A $\dfrac{\quad}{\mathbf{4}}$ Rule B

5
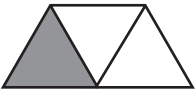
FRONT	BACK
	Rule A $\dfrac{\quad}{\quad}$ Rule B

6

FRONT	BACK
	Rule A $\dfrac{\quad}{\mathbf{3}}$ Rule B

Test Prep

7 Which is another way to write twelve thousand, eighty?

A. 1,280   **C.** 21,080

B. 12,080   **D.** 120,800

8 Which is another way to write twenty thousand, one hundred three?

A. 2,013   **C.** 20,103

B. 2,103   **D.** 200,130

Recording Rules with Fractions

Complete the set of FAR cards.

1

FRONT	BACK	
	Rule A	Rule B
⬤ ◯ ◯ ◯ ⬤ ◯ ◯ ◯ ⬤	$\dfrac{3}{9}$	_____

2

FRONT	BACK	
	Rule A	Rule B
	_____	$\dfrac{3}{8}$

3

FRONT	BACK	
	Rule A	Rule B
	$\dfrac{3}{4}$	$\dfrac{}{4}$

4

FRONT	BACK	
	Rule A	Rule B
◯ ◯ ◯ ◯ ⬤ ⬤	$\dfrac{2}{}$	$\dfrac{4}{6}$

5

FRONT	BACK	
	Rule A	Rule B
	$\dfrac{}{5}$	$\dfrac{4}{}$

6

FRONT	BACK	
	Rule A	Rule B
	_____	_____

Test Prep

7 Old stamps cost 37¢, and extra stamps cost 2¢. How much would you pay for 2 old stamps and 6 extra stamps?

A. 76¢   **C.** 86¢

B. 78¢   **D.** 90¢

8 Zach pays for a snack with 6 coins and does not get any change back. What could the snack cost?

A. 17¢   **C.** 38¢

B. 25¢   **D.** 44¢

Patterns in Geometry

**Find the pattern and draw the next figure.
Use the grid below.**

1
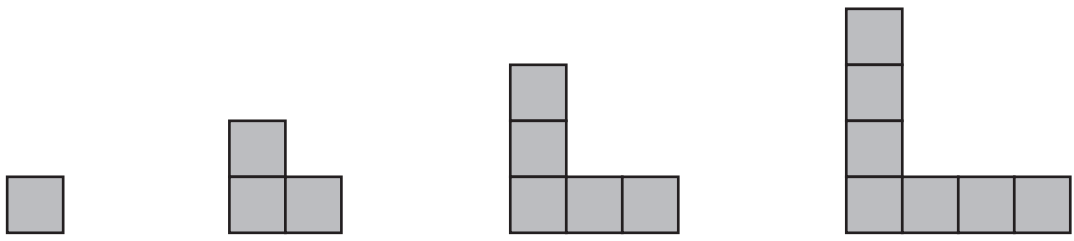
2
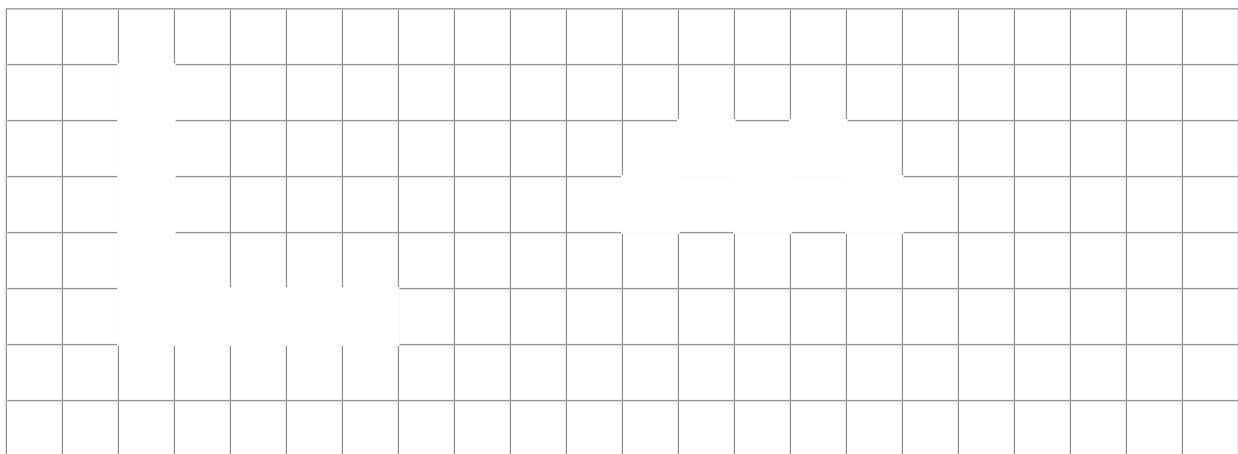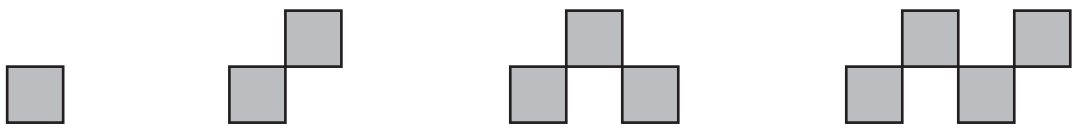
✏️ **Test Prep**

3 Darius puts 36¢ into two piles. One pile of coins
is worth twice as much as the other. What is the
smallest number of coins that could be in the
more valuable pile?

A. 6   **C.** 8

B. 7   **D.** 9

Patterns on the Number Line Hotel

**These grids are like the Number Line Hotel.
Describe the pattern in the shaded squares.**

10	11	12	13	14	15	16	17	18	19
0	1	2	3	4	5	6	7	8	9

1 What is a rule? _____

_____

Make your own pattern, and write a rule.

70	71	72	73	74	75	76	77	78	79
60	61	62	63	64	65	66	67	68	69
50	51	52	53	54	55	56	57	58	59
40	41	42	43	44	45	46	47	48	49
30	31	32	33	34	35	36	37	38	39

2 What is your rule? _____

Test Prep

3 Five friends are sharing some marbles. They
each take the same number of marbles. If each
person gets 7 marbles, what is the largest
number of marbles that could be left over?

A. 4   **C.** 6

B. 5   **D.** 7

Finding Rules for Sharing Machines

A machine shares equally among 3 people.
Complete the table.

Sharing Machine		
Contents of Each Input Package	**Number of Packages That Come Out**	**Contents of Each Output Package**
❶ 12 pears	3	_____ pears
❷ _____ grapes	3	9 grapes
❸ 18 carrots	3	_____ carrots
❹ 30 raisins		10 raisins
❺ _____ peaches	3	8 peaches
❻ 21 tomatoes	3	_____ tomatoes

❼ Write a division sentence to show what the machine
will do with 21 tomatoes.

_____

Test Prep

❽ There are 89 students and 12 adults going on
a school trip. Each van can carry 15 people. If
each van is filled before the next one is started,
how many people will be in the last van?
Explain how you found your answer.

_____

_____

More Rules with Sharing Machines

**This machine shares amounts equally among 6 people.
Complete the table.**

	Sharing Machine F		
	Contents of Each Input Package	**Number of Packages That Come Out**	**Contents of Each Output Package**
1	1 dozen eggs	6	2 eggs
2	12 trucks	6	
3			5 books
4			10 erasers
5			4 oranges
6	60 marbles		
7	18 beads		

Test Prep

8 The school store sells pens for 18¢ each and erasers for 12¢ each. Chad spent a total of 90¢ on pens and erasers. What is the largest number of erasers he could have bought?

A. 2   **C.** 5

B. 3   **D.** 6

9 The table shows the prices of apples at the supermarket. Carly buys 5 pounds of apples. If she pays with a five-dollar bill, how much change will she get?

A. 75¢   **C.** $1.25

B. $1.00   **D.** $2.25

Pounds	1	2	3	4
Price	75¢	$1.50	$2.25	$3.00

Finding a Rule for an Unusual Machine

Find a rule for the machine and complete the table.

	INPUT	OUTPUT
1	29¢	one bagel and 9¢
2	50¢	two bagels and 10¢
3	42¢	two bagels and ___
4		one bagel and 5¢
5	20¢	
6	44¢	
7	36¢	
8	58¢	two bagels and 18¢

9 Write a rule for the machine.

_____

Test Prep

10 Charlotte saved her allowance each week for 5 weeks.

	Week 1	Week 2	Week 3	Week 4	Week 5
SAVED	75¢	$1.50	$2.25	$3.00	$3.75

How much money will she have saved at the end of six weeks if she continues with this pattern?

A. $4.00   **C.** $4.50

B. $4.25   **D.** $5.00