Super Math Units

Using Food to Introduce Variables

Answer Key

Susan Mercer

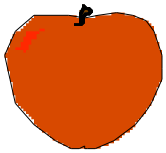
Writing Expressions

1. Picture

2. Describe the picture using words.

Two ice-creams and an apple

3. Draw each food and assign a different variable to each one.



a = apple

i = ice-cream

4. Write an expression to represent the picture.

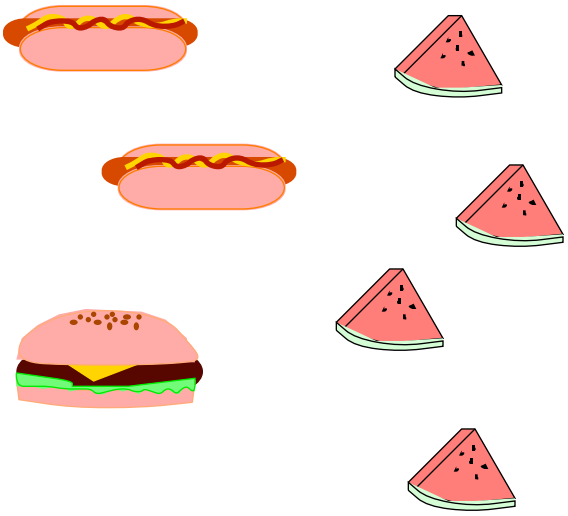
i + i + a

5. Combina like terms.

2i + a

Writing Expressions

1. Picture

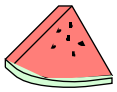


2. Describe the picture using words.

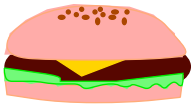
Two hot-dogs, a hamburger and four pieces of water melon.

3. Draw each food and assign a different variable to each one.

h = hot-dog



w = watermelon



b = burger

4. Write an expression to represent the picture.

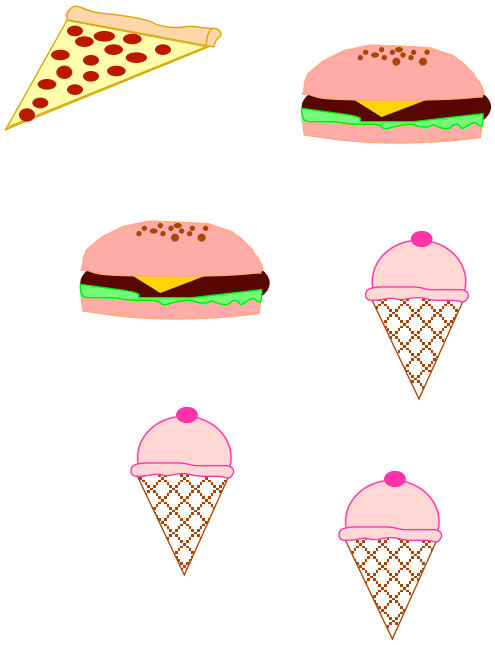
h + h + b + w + w + w + w

5. Combina like terms.

2h + b + 4w

Writing Expressions

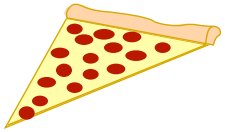
1. Picture



2. Describe the picture using words.

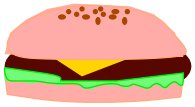
One pizza, two burgers and three ice-creams.

3. Draw each food and assign a different variable to each one.



p = pizza

i = ice-cream



b = burger

4. Write an expression to represent the picture.

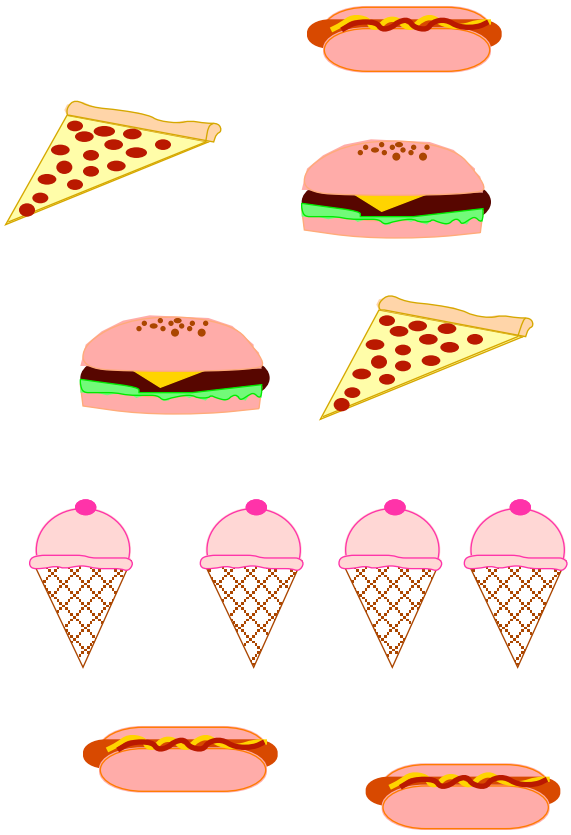
p + b + b + i + i + i

5. Combina like terms.

1p + 2b + 3i

Writing Expressions

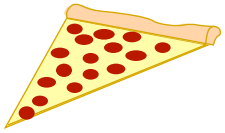
1. Picture



2. Describe the picture using words.

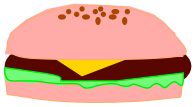
Two pizzas, two burgers, three hot-dogs and four ice-creams.

3. Draw each food and assign a different variable to each one.



p = pizza

i = ice-cream



b = burger

h = hot-dogs

4. Write an expression to represent the picture.

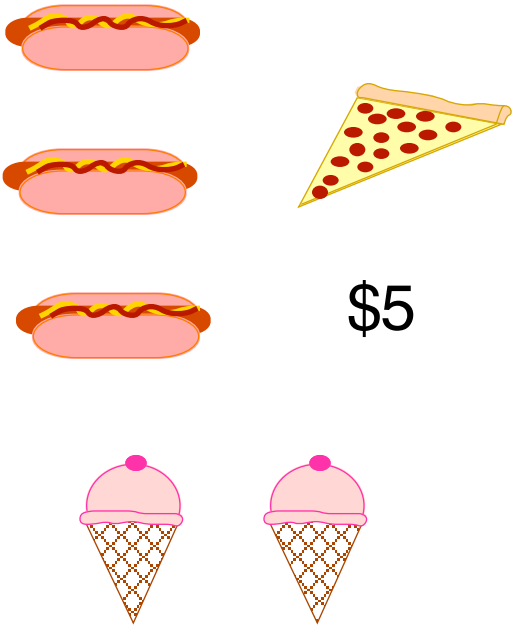
p + p + b + b + h + h + h + i + i + i + i

5. Combina like terms.

2p + 2b + 3h + 4i

Writing Expressions

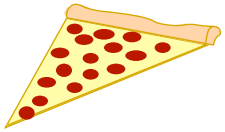
1. Picture



2. Describe the picture using words.

One pizza, three hot-dogs, two ice-creams and five dollars.

3. Draw each food and assign a different variable to each one.



p = pizza

i = ice-cream

h = hot-dogs

4. Write an expression to represent the picture.

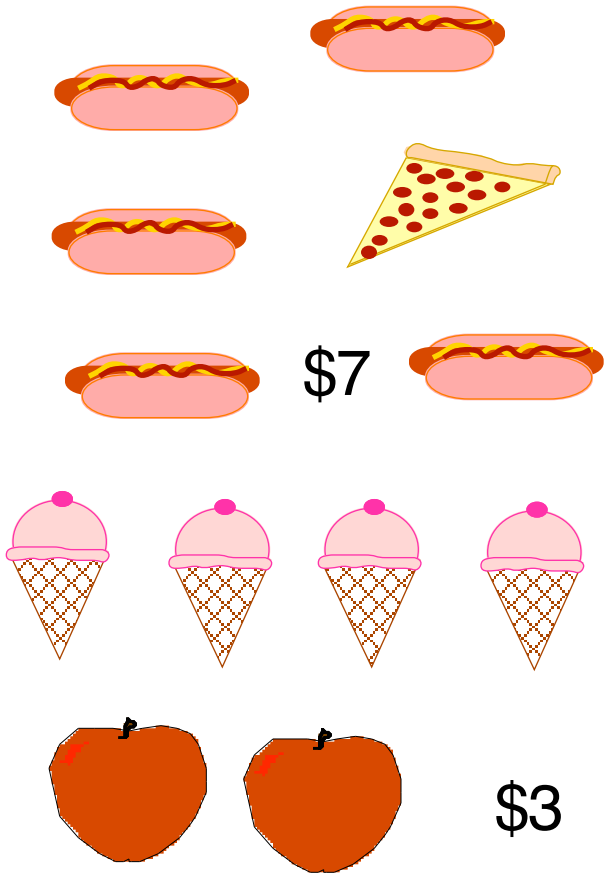
h + h + h + p + i + i + 5

5. Combina like terms.

3h + p + 2i + 5

Writing Expressions

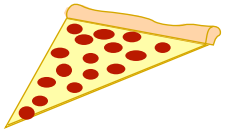
1. Picture



2. Describe the picture using words.

Five hot-dogs, two apples, one pizza, four ice-creams, seven dollars and three dollars.

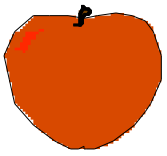
3. Draw each food and assign a different variable to each one.



p = pizza

i = ice-cream

h = hot-dog



a = apple

4. Write an expression to represent the picture.

h + h + h + h + h + p + i + i + i + i + a + a + 7 + 3

5. Combina like terms.

5h + p + 4i + 2a + 10

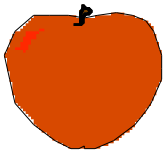
Representing Expressions

1. Expression

2a + h

2. Draw a food for each variable.

h = hot-dog

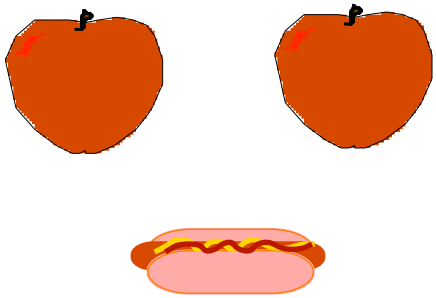


a = apple

3. Describe the expression using words.

Two apples and one hot-dog.

4. Draw a picture to represent the expression.



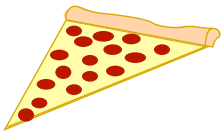
Representing Expressions

1. Expression.

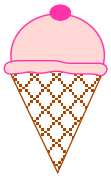
2h + 3p + 5i

2. Draw a food for each variable.

h = hot-dog



p = pizza

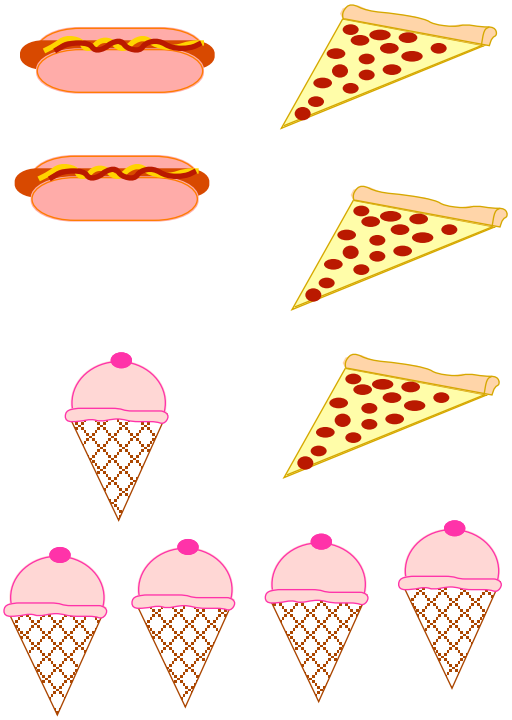


i = ice-cream

3. Describe the expression using words.

Two hot-dogs, three pizzas and five ice-creams.

4. Draw a picture to represent the expression.

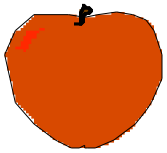


Representing Expressions

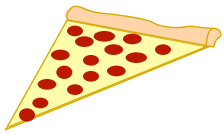
1. Expression.

7p + 3a + 5

2. Draw a food for each variable.



a = apples

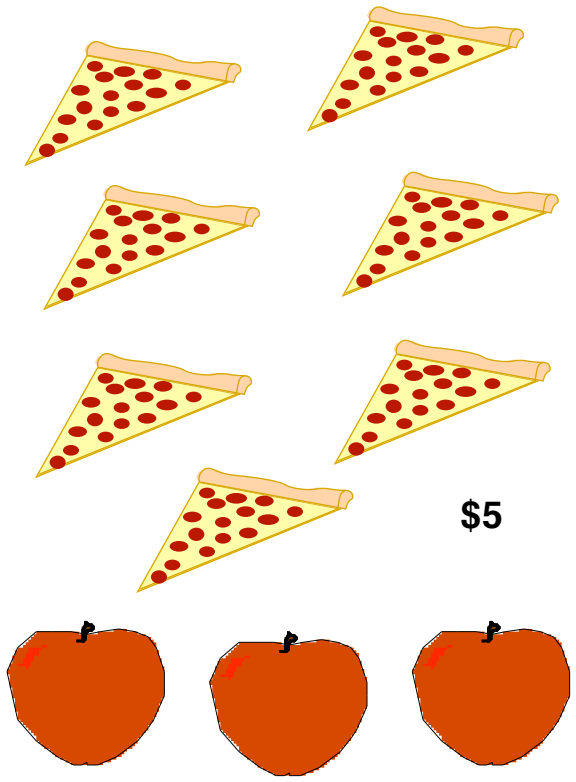


p = pizza

3. Describe the expression using words.

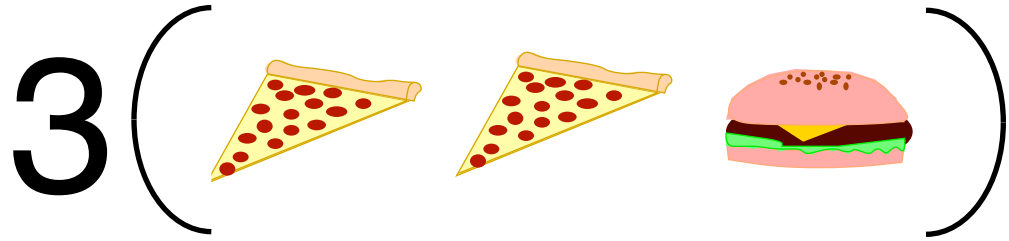
Seven pizzas, three apples and 5 dollars.

4. Draw a picture to represent the expression.



Distributive Property

1. Picture using parenthesis.



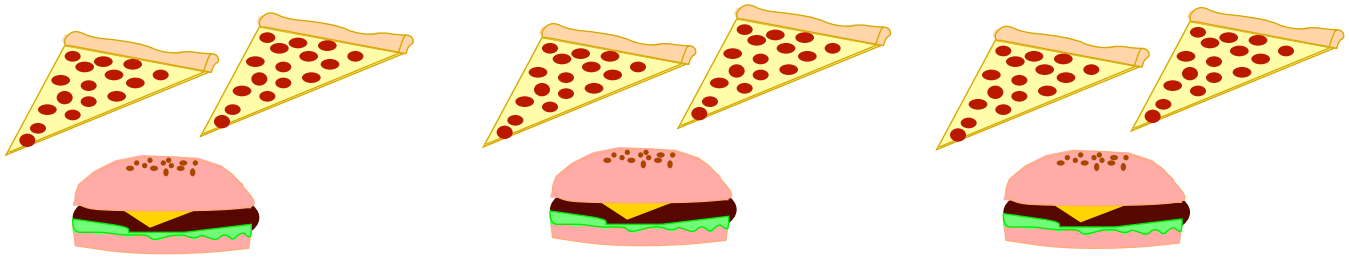
2. Describe the picture using words.

Three groups of two pieces of pizza and a burger.

3. Write an expression to represent the picture.

3 (2p + b)

4. Draw a picture to represent number 1 without the parenthesis.



5. Describe the picture using words.

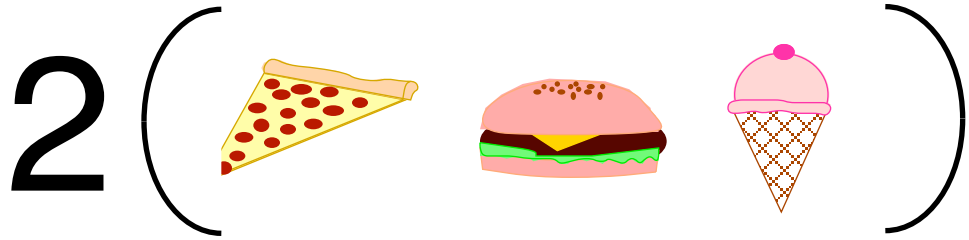
Six pizzas and three burgers

6. Write an expression to represent the picture.

6p + 3b

Distributive Property

1. Picture using parenthesis.



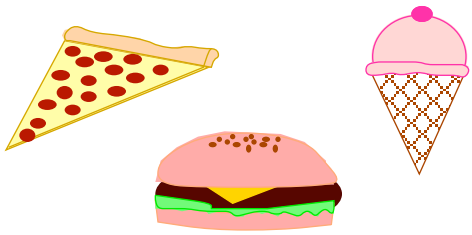
2. Describe the picture using words.

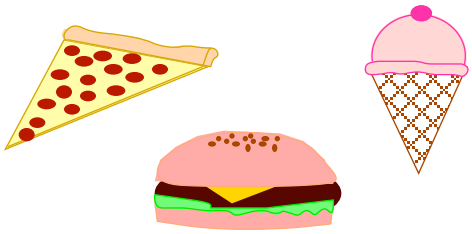
Two groups of a pizza, a burger and an ice-cream

3. Write an expression to represent the picture.

2 (p + b + i)

4. Draw a picture to represent number 1 without the parenthesis.





5. Describe the picture using words.

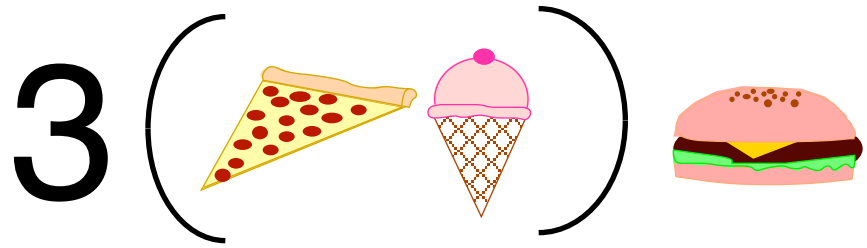
Two pizzas, two burgers and two ice-creams.

6. Write an expression to represent the picture.

2p + 2b + 2i

Distributive Property

1. Picture using parenthesis.



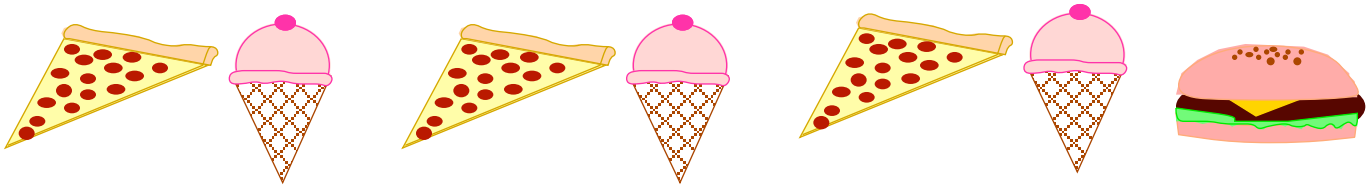
2. Describe the picture using words.

Three groups of a pizza and an ice-cream; outside the group you have a burger.

3. Write an expression to represent the picture.

3 (p + i) + b

4. Draw a picture to represent number 1 without the parenthesis.



5. Describe the picture using words.

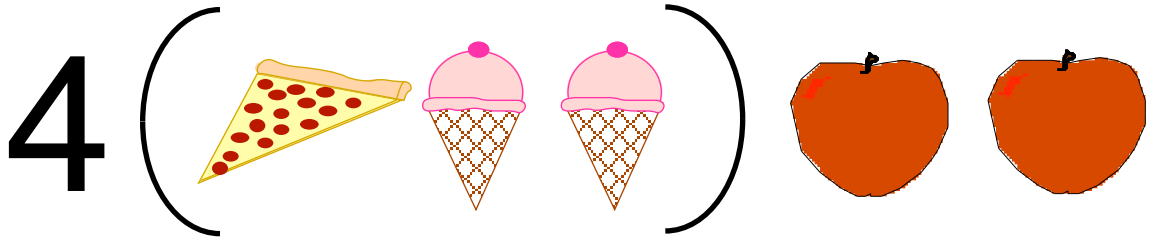
Three pizzas, three ice-creams and one burger.

6. Write an expression to represent the picture.

3p + 3i + b

Distributive Property

1. Picture using parenthesis.



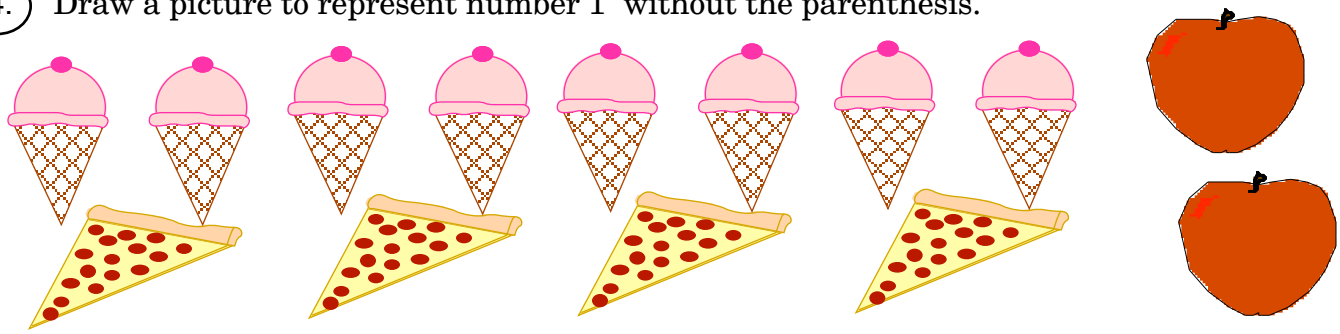
2. Describe the picture using words.

Four groups of a pizza and two ice-creams; outside the group you have two apples.

3. Write an expression to represent the picture.

4 (p + 2i) + 2a

4. Draw a picture to represent number 1 without the parenthesis.



5. Describe the picture using words.

Four pizzas, eight ice-creams and two apples.

6. Write an expression to represent the picture.

4p + 8i + 2a

Distributive Property

1. Picture without using parenthesis.

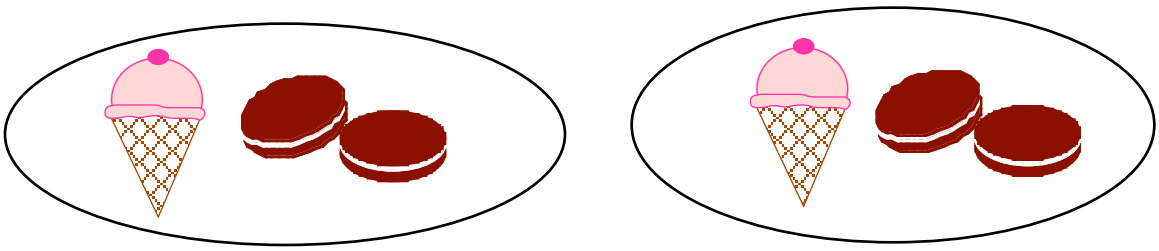
2. Describe the picture using words.

Two ice-creams and four cookies

3. Write an expression to represent the picture.

2i + 4c

4. Put the above foods in two equal groups.



5. Describe the picture using words.

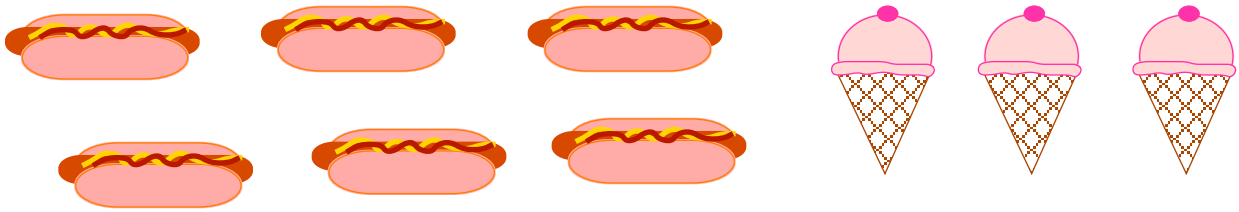
Two groups of one ice-cream and two cookies.

6. Write an expression using parenthesis to represent the picture.

2(i + 2c)

Distributive Property

1. Picture without using parenthesis.



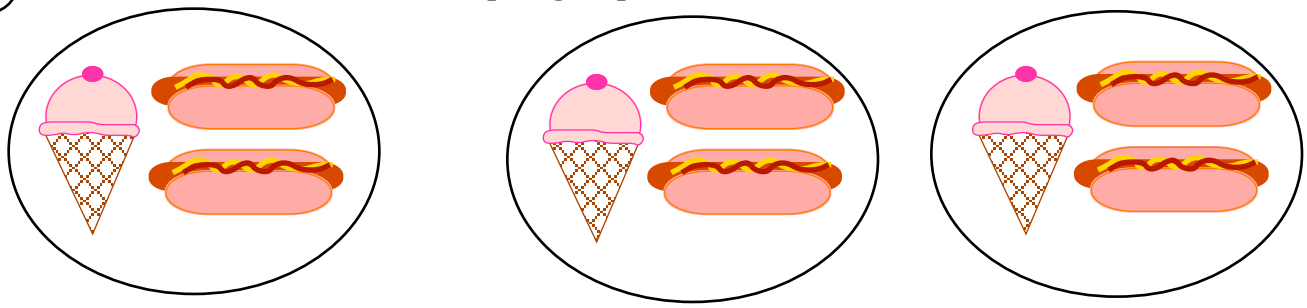
2. Describe the picture using words.

Six hot-dogs and three ice-creams.

3. Write an expression to represent the picture.

6h + 3i

4. Put the above foods in __3__ equal groups.



5. Describe the picture using words.

Three groups of one ice-cream and two hot-dogs.

6. Write an expression using parenthesis to represent the picture.

3(i + 2h)

Distributive Property

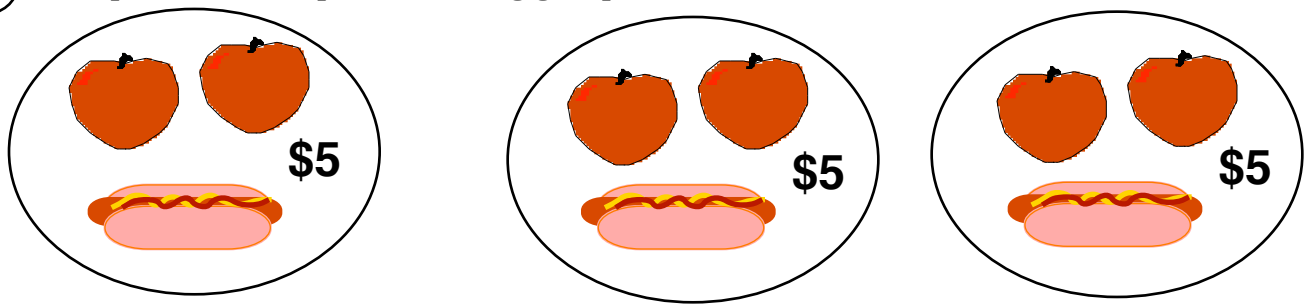
1. Expression with parenthesis

3(2a + h + 5)

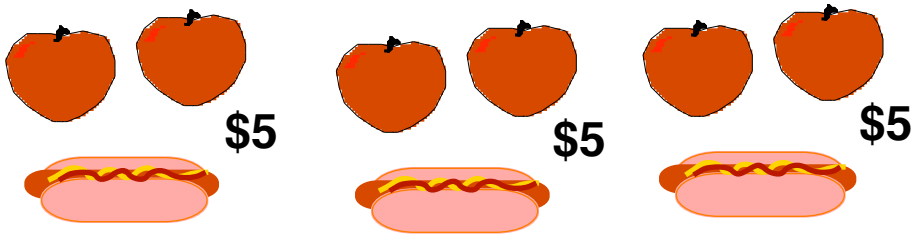
2. Describe the expression using words.

Three groups of two apples, one hot-dog and five dollars

3. Represent the expression using groups



4. Represent the expression without using groups



5. Describe above the picture using words.

Six apples, three hot-dogs and fifteen dollars.

6. Write an expression without using parenthesis to represent the picture.

6a + 3h + 15

Distributive Property

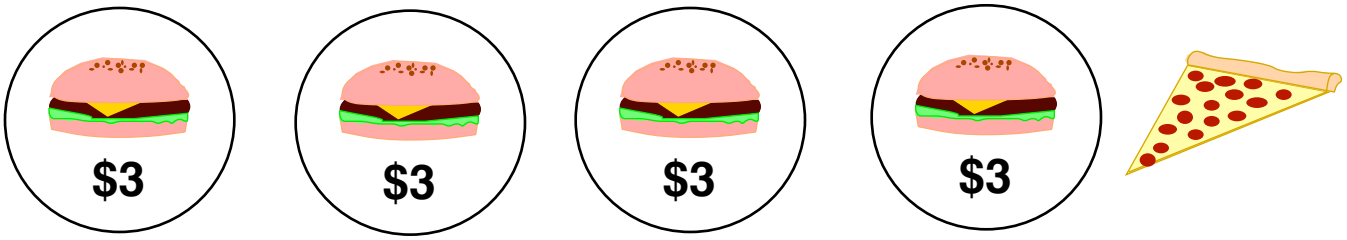
1. Expression with parenthesis

4(b + 3) + p

2. Describe the expression using words.

Four groups of a burger and three dollars; outside the groups a pizza

3. Represent the expression using groups



4. Represent the expression without using groups

5. Describe above the picture using words.

Four burgers, twelve dollars and a pizza.

6. Write an expression without using parenthesis to represent the picture.

4b + p + 12

Distributive Property

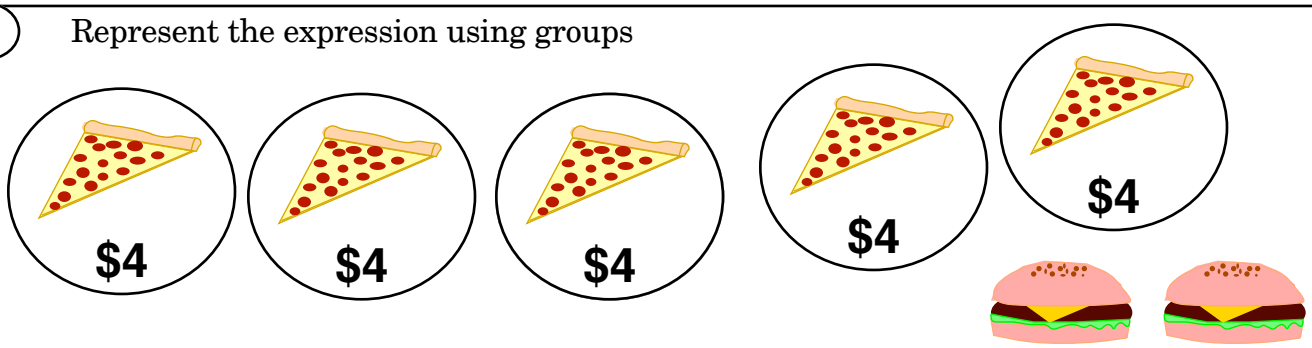
1. Expression with parenthesis

5(p + 4) + 2b

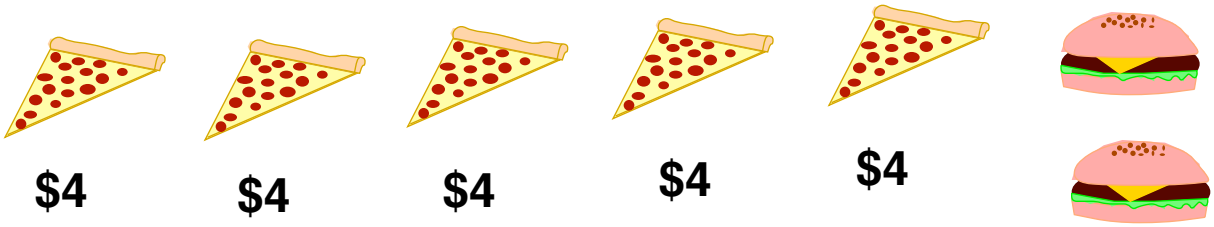
2. Describe the expression using words.

Four groups of a pizza and four dollars; outside the groups two burgers

3. Represent the expression using groups



4. Represent the expression without using groups



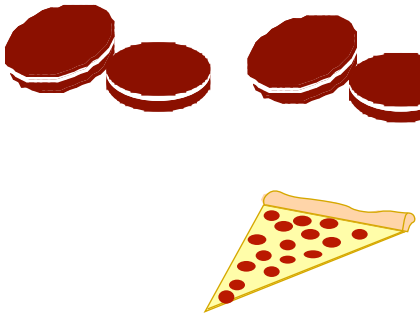
5. Describe above the picture using words.

Five pizzas, twenty dollars and two burgers.

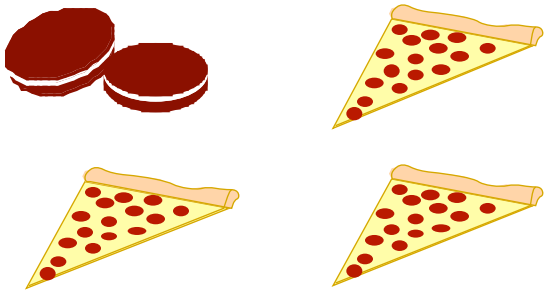
6. Write an expression without using parenthesis to represent the picture.

5b + 2b + 20

Adding Expressions

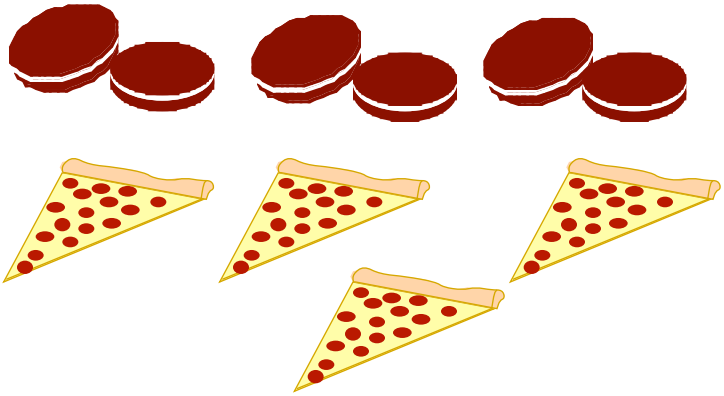


Expression: **4c + p**



Expression: **2c + 3p**

Combine

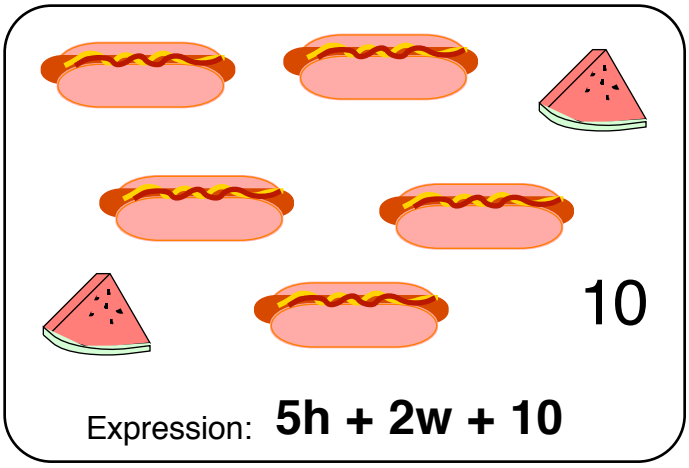


Expression: **6c + 4p**

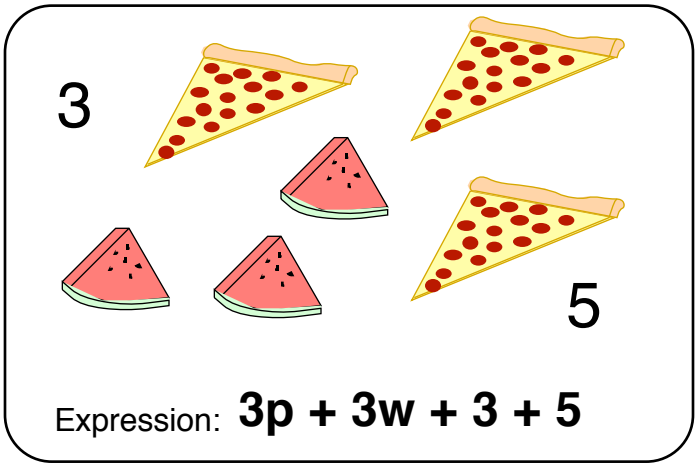
Add the expressions: **(4c + p) + (2c + 3p)**

Combine like terms: **6c + 4p**

Adding Expressions

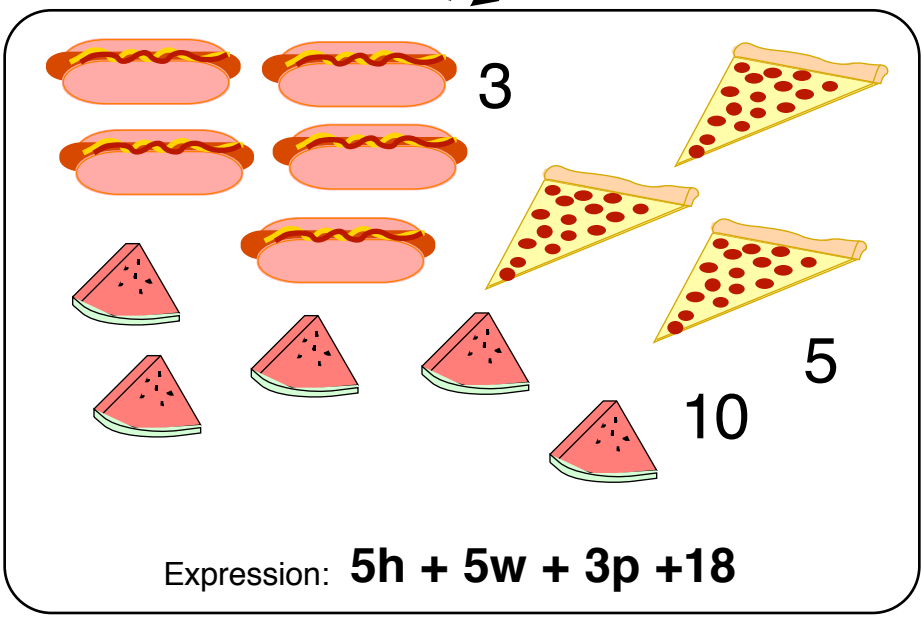


Expression: **5h + 2w + 10**



Expression: **3p + 3w + 3 + 5**

Combine

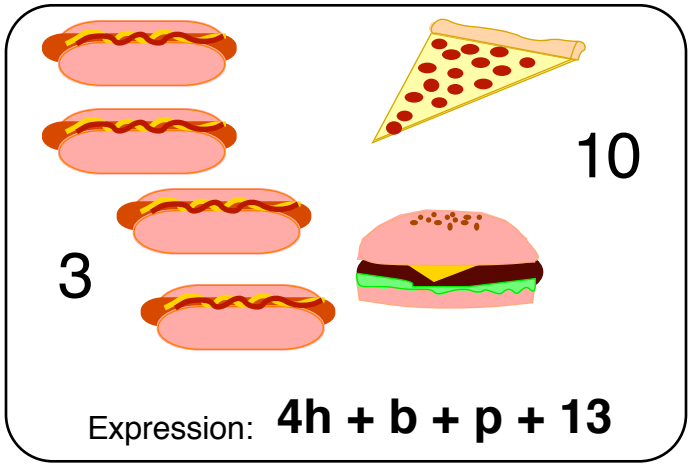


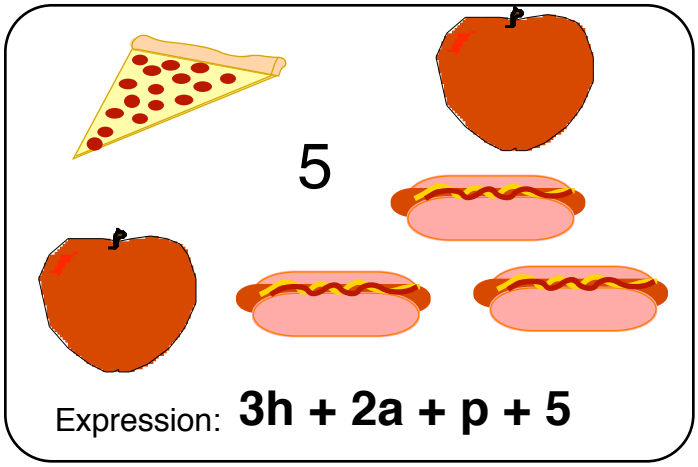
Expression: **5h + 5w + 3p +18**

Add the expressions: **(5h + 2w + 10) + (3p + 3w + 3 + 5)**

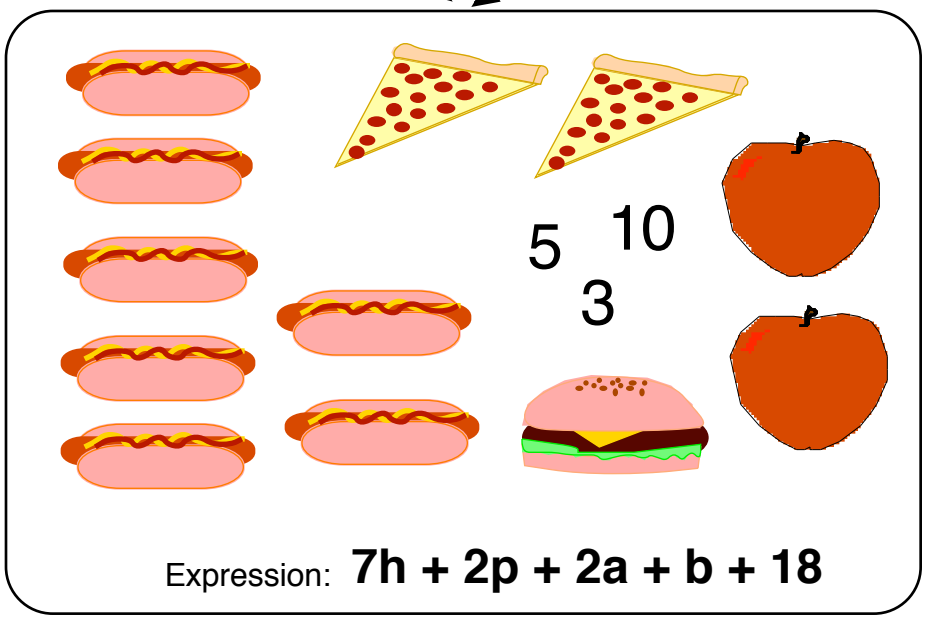
Combine like terms: **5h + 5w + 3p + 18**

Adding Expressions





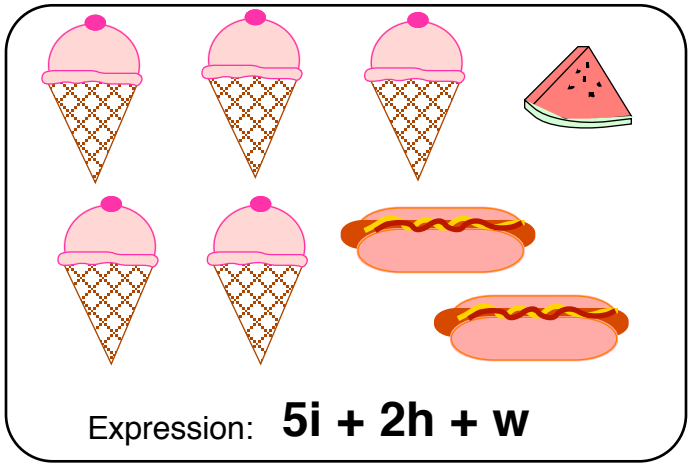
Combine



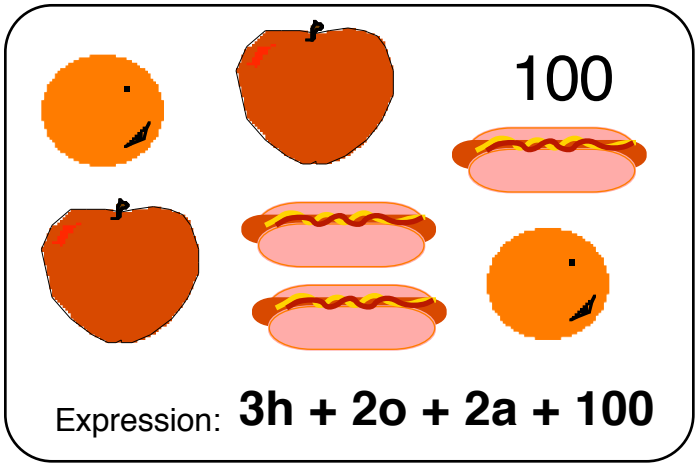
Add the expressions: **(4h + b + p + 13) + (3h + 2a + p + 5)**

Combine like terms: **7h + 2p + 2a + b + 18**

Adding Expressions

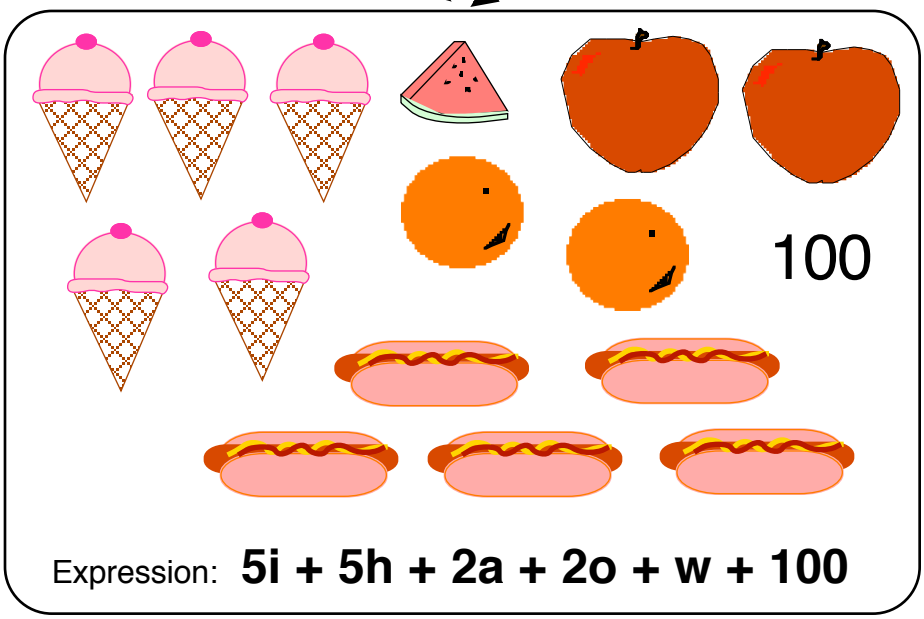


Expression: **5i + 2h + w**



Expression: **3h + 2o + 2a + 100**

Combine

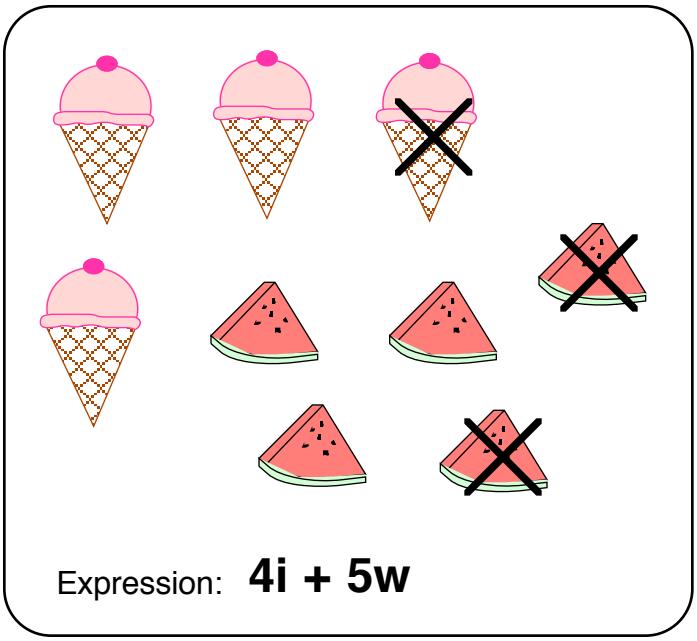


Expression: **5i + 5h + 2a + 2o + w + 100**

Add the expressions: **(5i + 2h + w) + (3h + 2o + 2a + 100)**

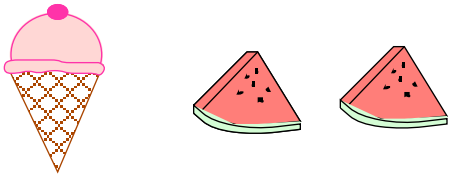
Combine like terms: **5i + 5h + 2a + 2o + w + 100**

Subtracting Expressions



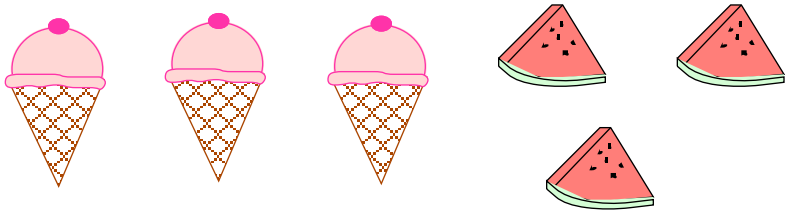
Expression: **4i + 5w**

Take away



Expression: **i + 2w**

What is left?

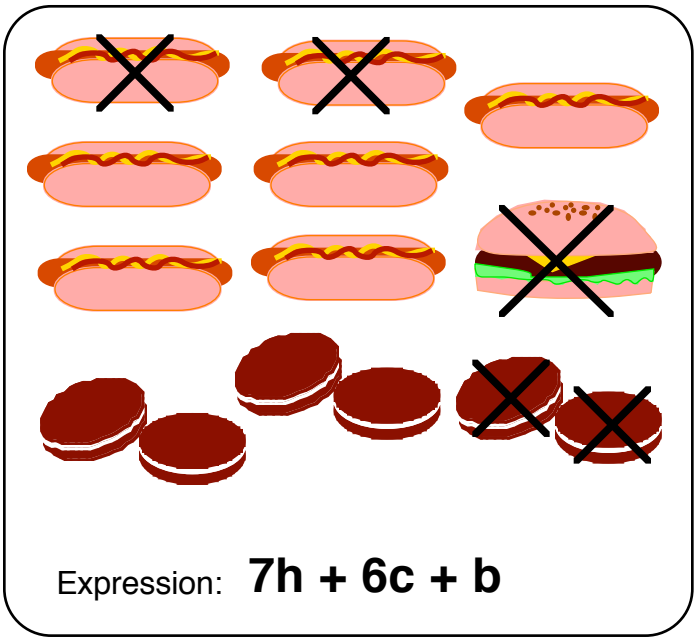


Expression: **3i + 3w**

Subtract the expressions: **4i + 5w - i - 2w**

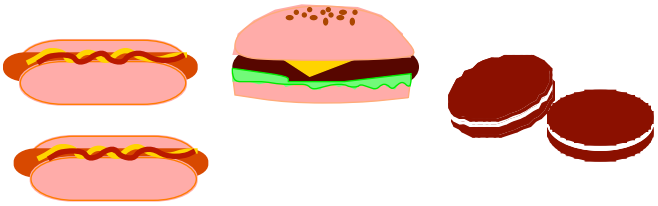
Subtract like terms: **3i + 3w**

Subtracting Expressions



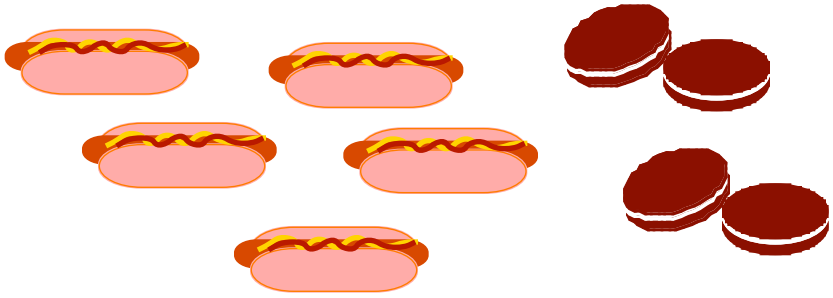
Expression: **7h + 6c + b**

Take away



Expression: **2h + 2c + b**

What is left?

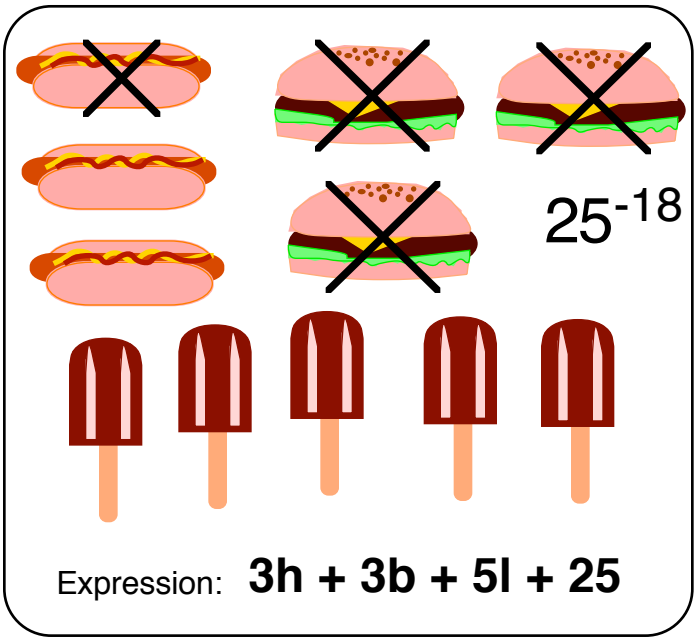


Expression: **5h + 4c**

Subtract the expressions: **7h + 6c + b - 2h - 2c - b**

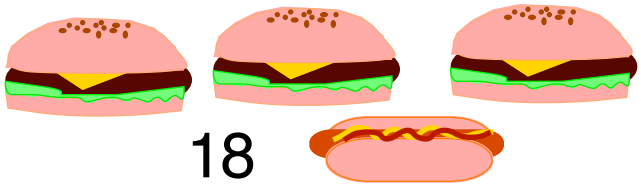
Subtract like terms: **5h + 4c**

Subtracting Expressions



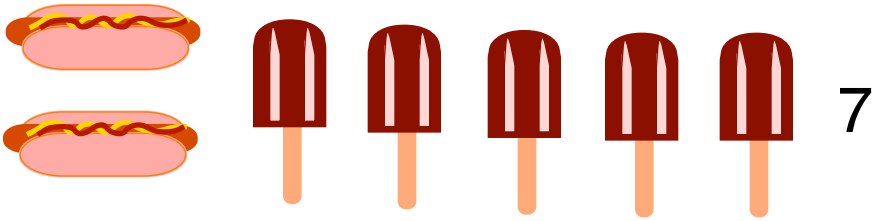
Expression: **3h + 3b + 5l + 25**

Take away



Expression: **3b + h + 18**

What is left?



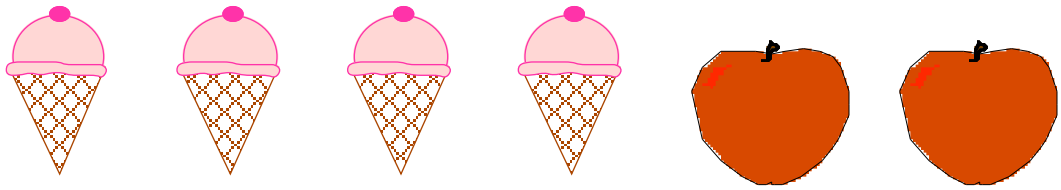
Expression: **2h + 5l + 0b + 7**

Subtract the expressions: **3h + 3b + 5l + 25 - 3b - h -18**

Subtract like terms: **2h + 5l + 0b + 7**

Substitution

1. Representation.



2. Write an expression for the representation.

4i + 2a

3. Calculate the value of the expression if each food has the following price:

ice cream cost $1;

apples cost $2;

hamburgers cost $5;

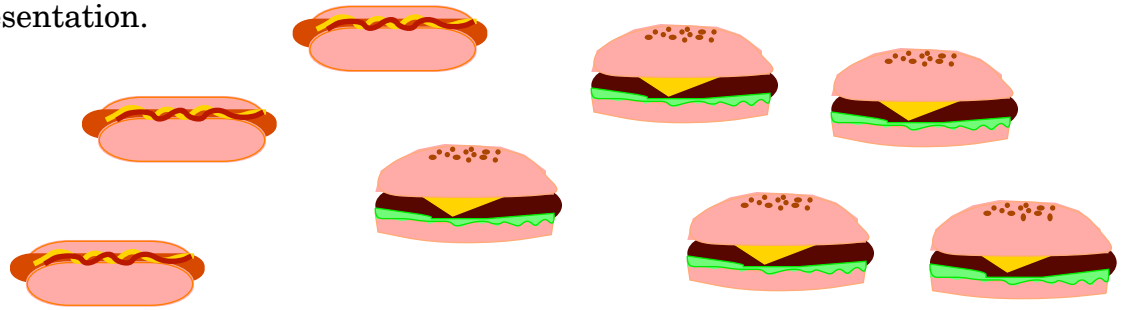
hot-dogs cost $3;

pizza cost $ 4.

4 • $1 + 2 • $2 = $4 + $4 = $8

Substitution

1. Representation.



2. Write an expression for the representation.

3h+ 5b

3. Calculate the value of the expression if each food has the following price:

ice cream cost $1;

apples cost $2;

hamburgers cost $5;

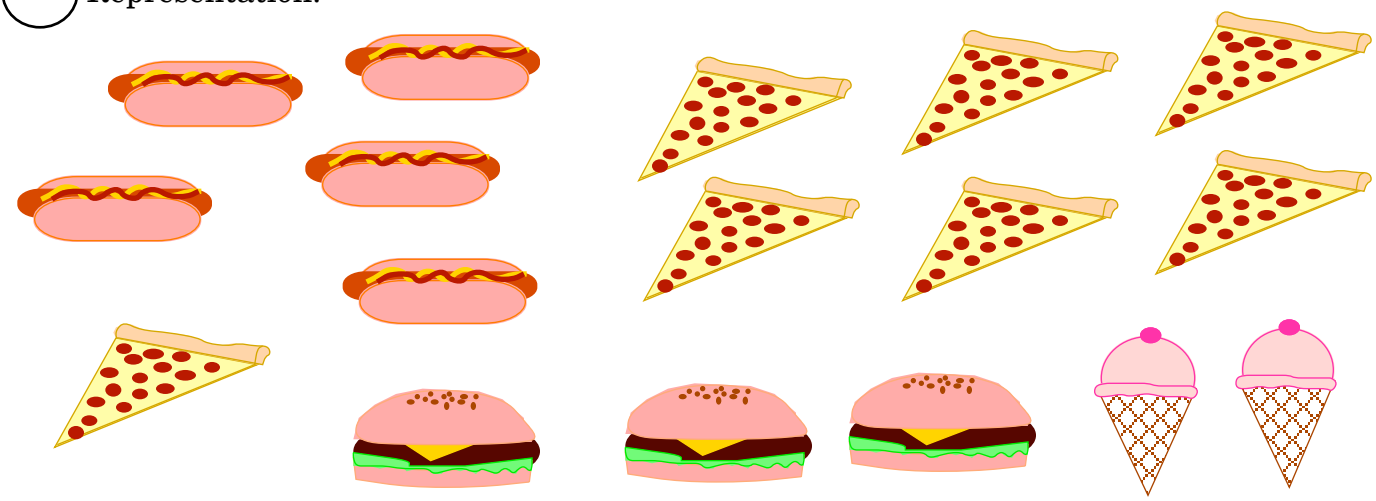
hot-dogs cost $3;

pizza cost $ 4.

3 • $3 + 5 • $5 = $9 + $25 = $36

Substitution

1. Representation.



2. Write an expression for the representation.

$$5h + 7p + 3b + 2i$$

3. Calculate the value of the expression if each food has the following price:

ice cream cost $1;

apples cost $2;

hamburgers cost $5;

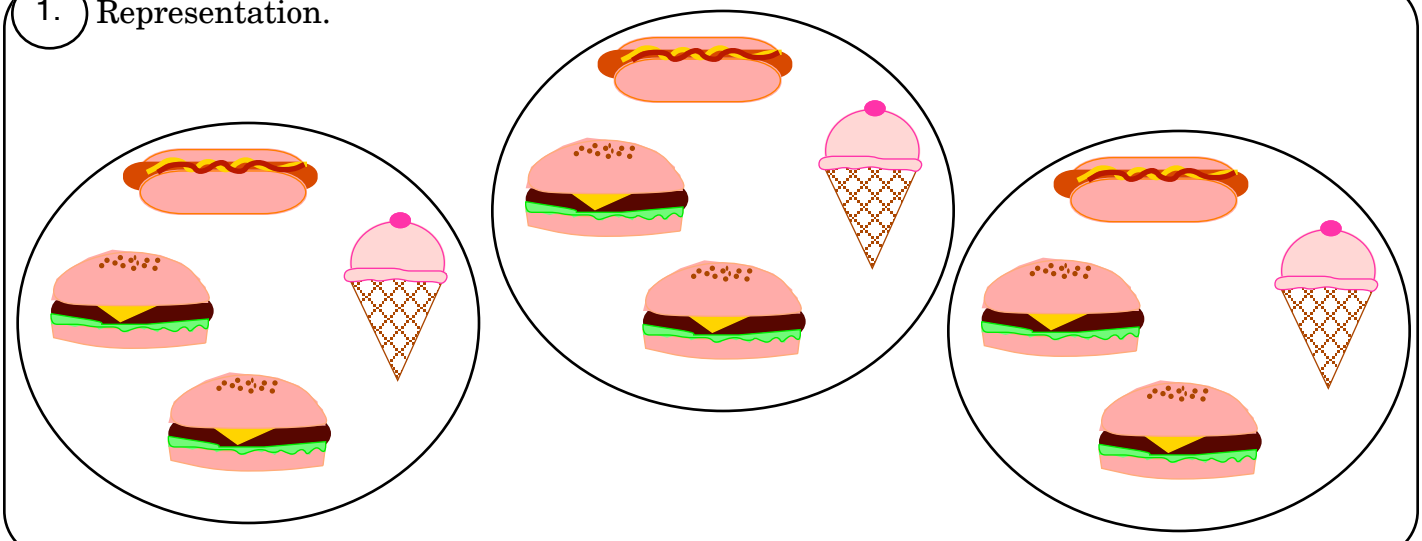
hot-dogs cost $3;

pizza cost $ 4.

$$5 \cdot \$3 + 7 \cdot \$4 + 3 \cdot \$5 + 2 \cdot \$1$$
$$\$15 + \$28 + \$15 + \$2 = \$60$$

Substitution

1. Representation.



2. Write an expression for the representation.

3(2b + h + i)

3. Calculate the value of the expression if each food has the following price:

ice cream cost $1;

apples cost $2;

hamburgers cost $5;

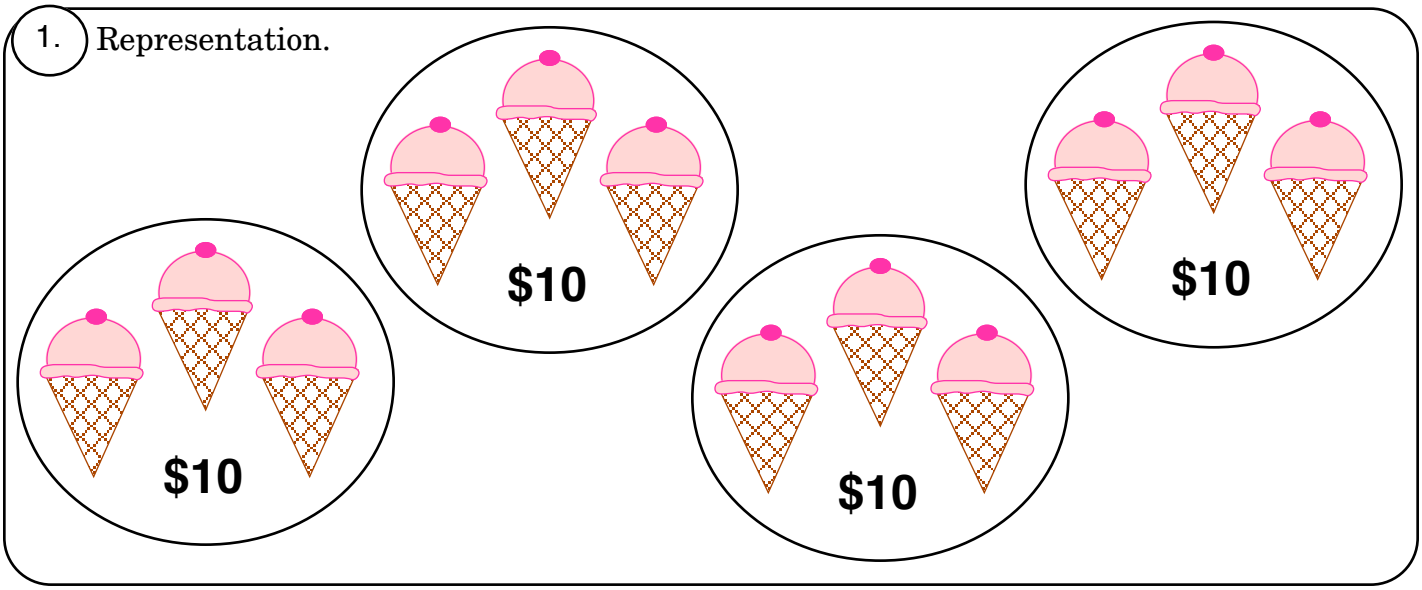
hot-dogs cost $3;

pizza cost $ 4.

3 (2 • $5 + $3 + $1)
3 ($10 + $3 + $1)
3 ($14) {each group has a value of $14}
$52

Substitution

1. Representation.



2. Write an expression for the representation.

4(3i + $10)

3. Calculate the value of the expression if each food has the following price:

ice cream cost $1;

apples cost $2;

hamburgers cost $5;

hot-dogs cost $3;

pizza cost $ 4.

4 (3 • $1 + $10)
4 ($3 + $10)
4 ($13) {each group has a value of $13}
$52

Super Math Units

Using Food to Introduce Variables

Name: _____

Period: _____

Date: _____

Writing Expressions

1. Picture

2. Describe the picture using words.

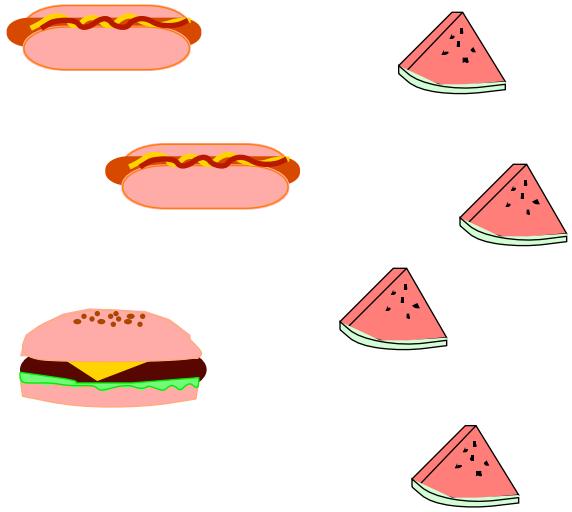
3. Draw each food and assign a different variable to each one.

4. Write an expression to represent the picture.

5. Combine like terms.

Writing Expressions

1. Picture



2. Describe the picture using words.

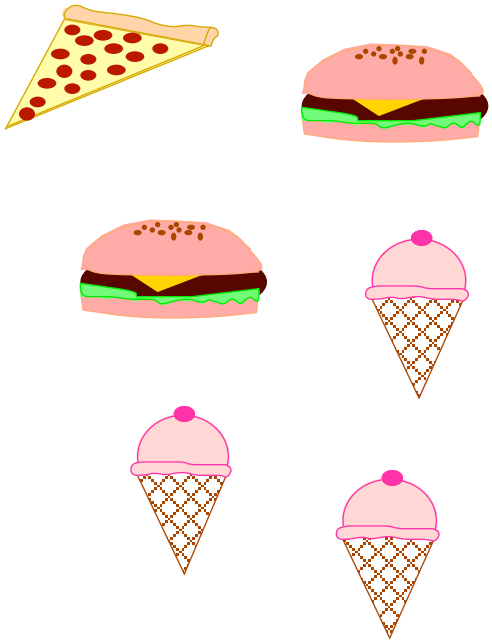
3. Draw each food and assign a different variable to each one.

4. Write an expression to represent the picture.

5. Combine like terms.

Writing Expressions

1. Picture



2. Describe the picture using words.

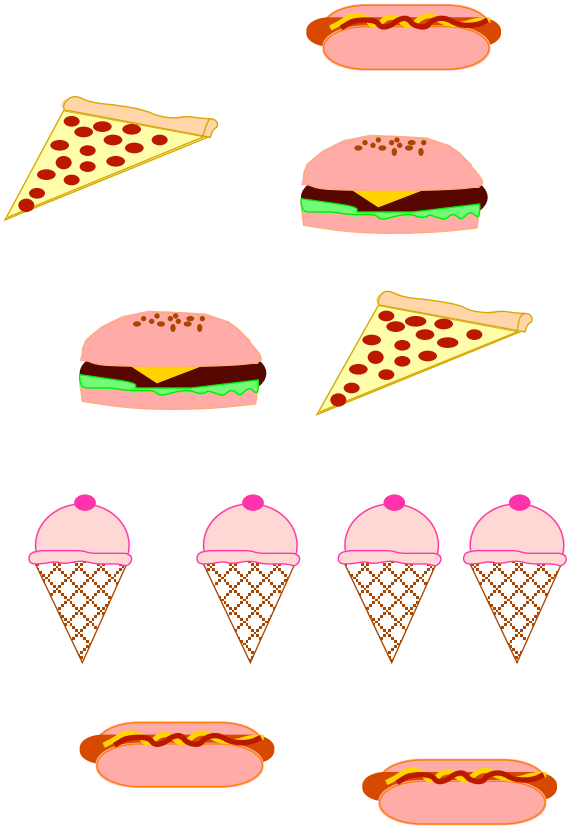
3. Draw each food and assign a different variable to each one.

4. Write an expression to represent the picture.

5. Combine like terms.

Writing Expressions

1. Picture



2. Describe the picture using words.

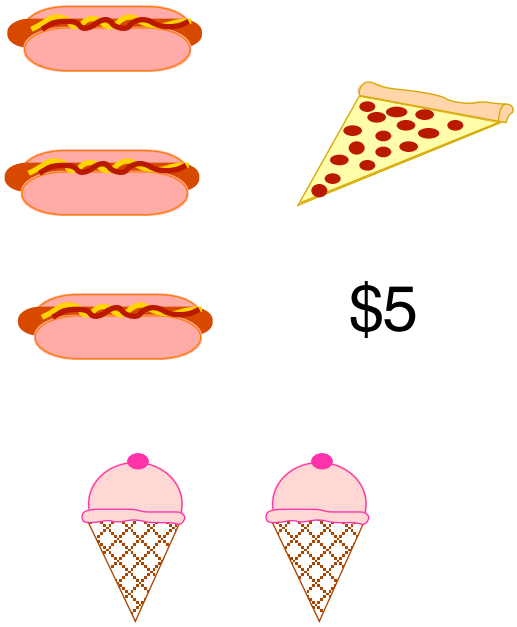
3. Draw each food and assign a different variable to each one.

4. Write an expression to represent the picture.

5. Combine like terms.

Writing Expressions

1. Picture



2. Describe the picture using words.

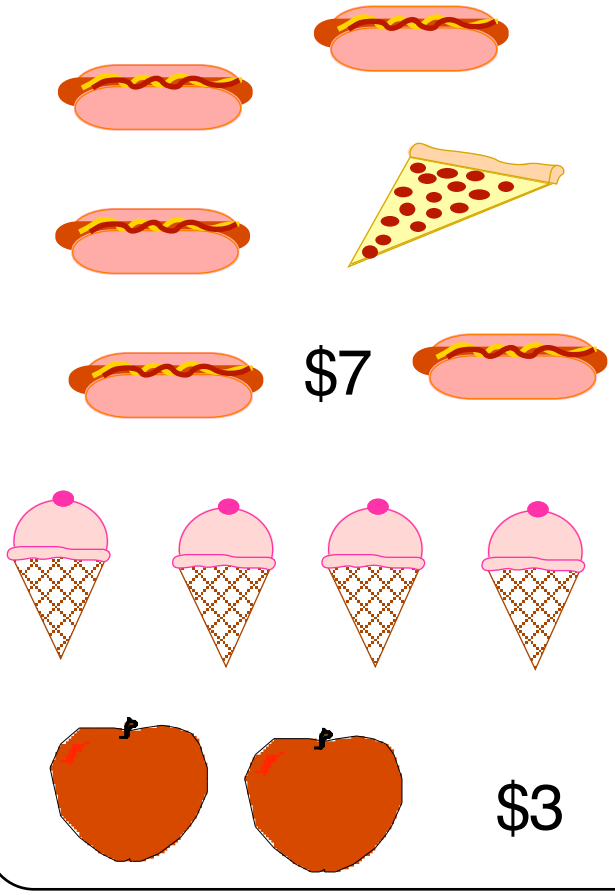
3. Draw each food and assign a different variable to each one.

4. Write an expression to represent the picture.

5. Combine like terms.

Writing Expressions

1. Picture



2. Describe the picture using words.

3. Draw each food and assign a different variable to each one.

4. Write an expression to represent the picture.

5. Combine like terms.

Representing Expressions

1. Expression

2a + h

2. Draw a food for each variable.

3. Describe the expression using words.

4. Draw a picture to represent the expression.

Representing Expressions

1. Expression

2h + 3p + 5i

2. Draw a food for each variable.

3. Describe the expression using words.

4. Draw a picture to represent the expression.

Representing Expressions

1. Expression

7p + 3a + 5

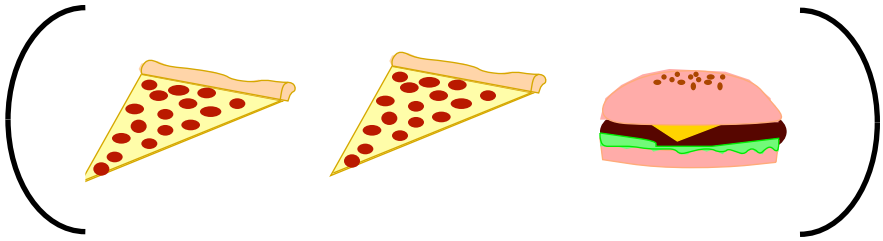
2. Draw a food for each variable.

3. Describe the expression using words.

4. Draw a picture to represent the expression.

Distributive Property

1. Picture using parenthesis.

3 

2. Describe the picture using words.

3. Write an expression to represent the picture.

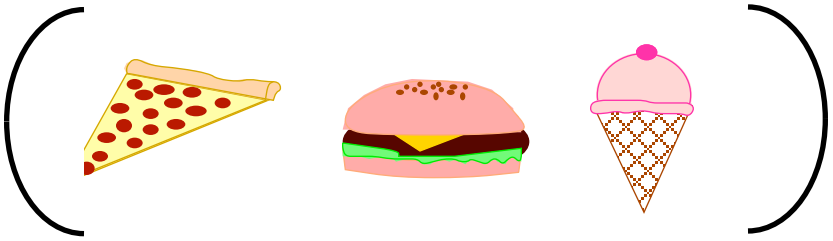
4. Draw a picture to represent number 1 without the parenthesis.

5. Describe the picture using words.

6. Write an expression to represent the picture.

Distributive Property

1. Picture using parenthesis.

2 

2. Describe the picture using words.

3. Write an expression to represent the picture.

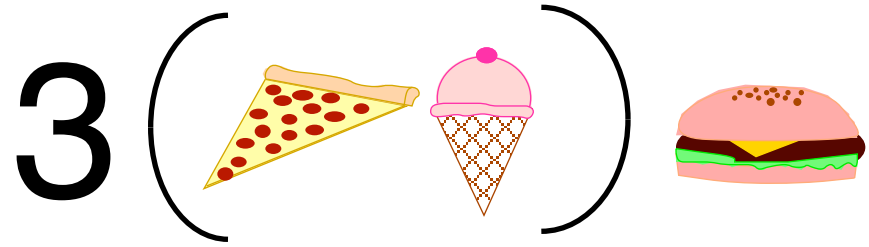
4. Draw a picture to represent number 1 without the parenthesis.

5. Describe the picture using words.

6. Write an expression to represent the picture.

Distributive Property

1. Picture using parenthesis.



2. Describe the picture using words.

3. Write an expression to represent the picture.

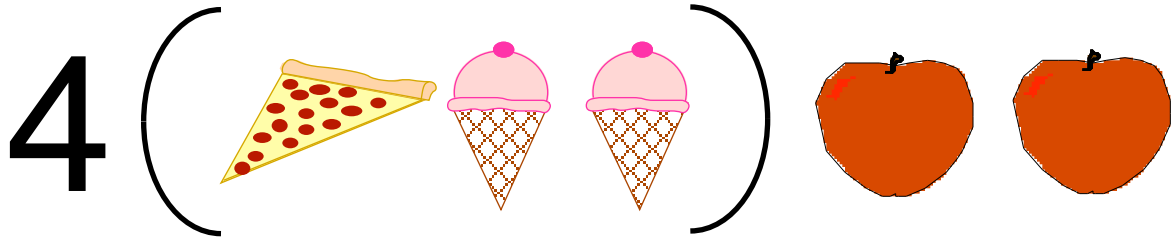
4. Draw a picture to represent number 1 without the parenthesis.

5. Describe the picture using words.

6. Write an expression to represent the picture.

Distributive Property

1. Picture using parenthesis.



2. Describe the picture using words.

3. Write an expression to represent the picture.

4. Draw a picture to represent number 1 without the parenthesis.

5. Describe the picture using words.

6. Write an expression to represent the picture.

Distributive Property

1. Picture without using parenthesis.

2. Describe the picture using words.

3. Write an expression to represent the picture.

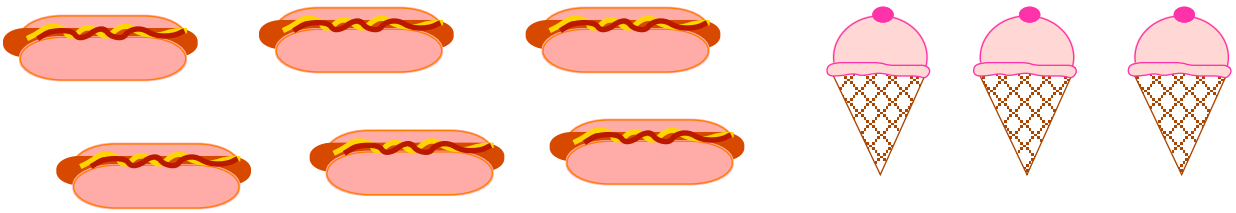
4. Put the above foods in two equal groups.

5. Describe the picture using words.

6. Write an expression using parenthesis to represent the picture.

Distributive Property

1. Picture without using parenthesis.



2. Describe the picture using words.

3. Write an expression to represent the picture.

4. Put the above foods in two equal groups.

5. Describe the picture using words.

6. Write an expression using parenthesis to represent the picture.

Distributive Property

1. Expression with parenthesis

3(2a + h + 5)

2. Describe the expression using words.

3. Represent the expression using groups

4. Represent the expression without using groups

5. Describe above the picture using words.

6. Write an expression without using parenthesis to represent the picture.

Distributive Property

1. Expression with parenthesis

4 (b + 3) + p

2. Describe the expression using words.

3. Represent the expression using groups

4. Represent the expression without using groups

5. Describe above the picture using words.

6. Write an expression without using parenthesis to represent the picture.

Distributive Property

1. Expression with parenthesis

5 (p + 4) + 2b

2. Describe the expression using words.

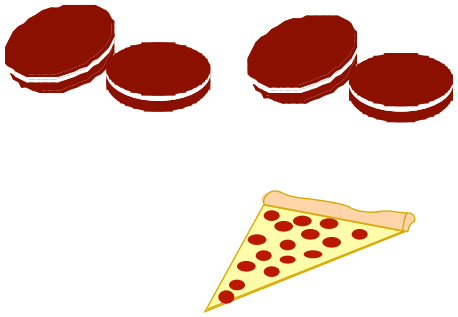
3. Represent the expression using groups

4. Represent the expression without using groups

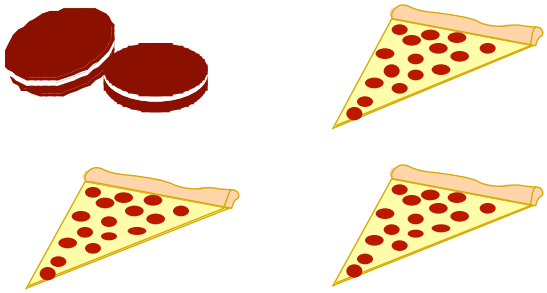
5. Describe above the picture using words.

6. Write an expression without using parenthesis to represent the picture.

Adding Expressions



Expression:



Expression:

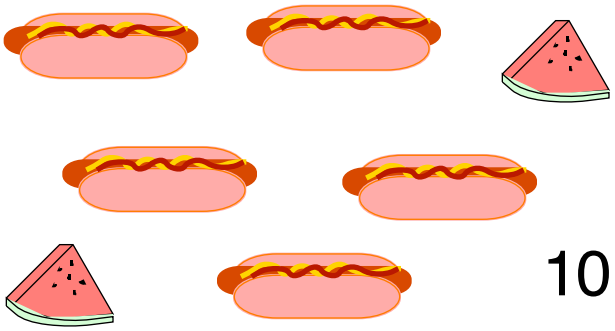
Combine

Expression:

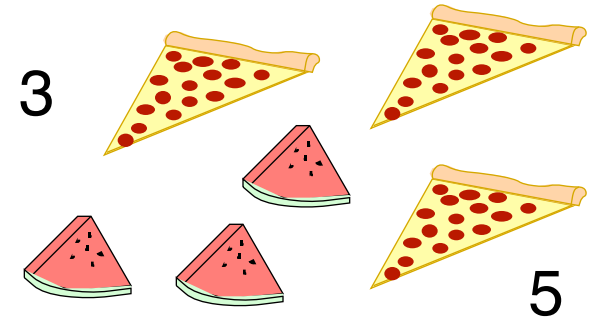
Add the expressions:

Combine like terms:

Adding Expressions



Expression:



Expression:

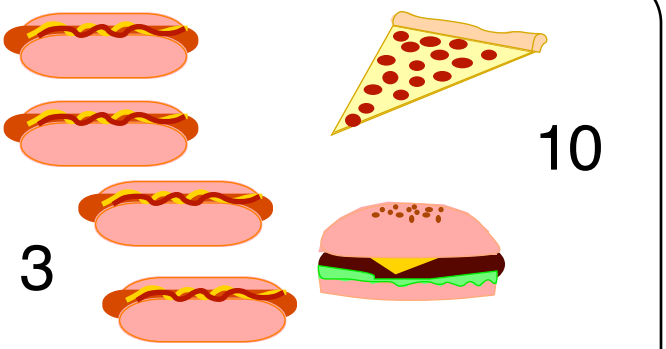
Combine

Expression:

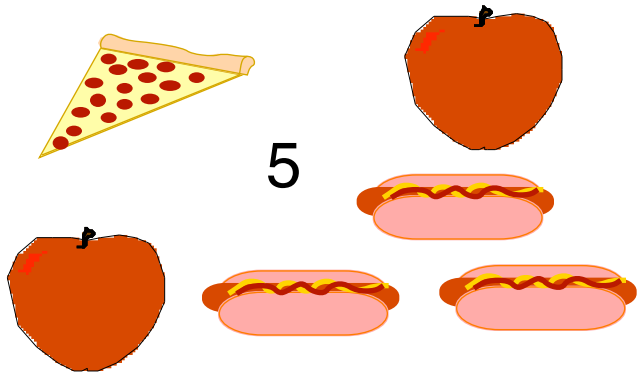
Add the expressions:

Combine like terms:

Adding Expressions



Expression:



Expression:

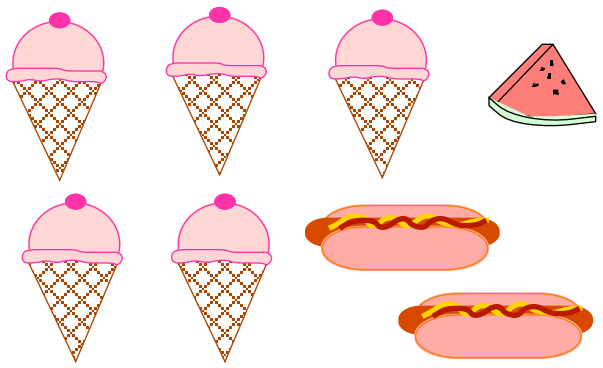
Combine

Expression:

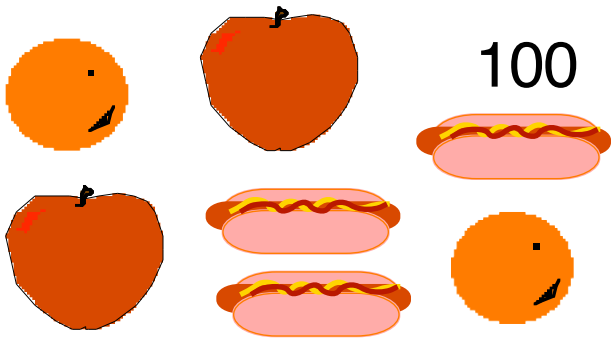
Add the expressions:

Combine like terms:

Adding Expressions



Expression:



Expression:

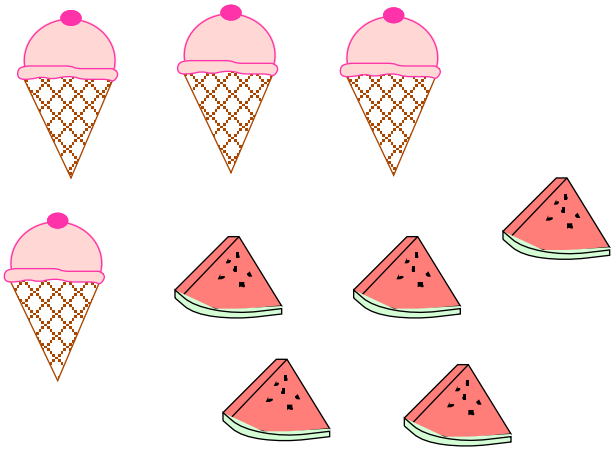
Combine

Expression:

Add the expressions:

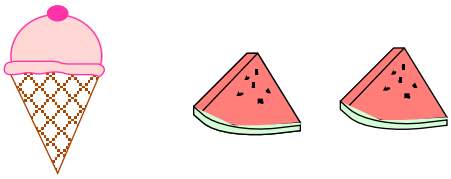
Combine like terms:

Subtracting Expressions



Expression:

Take away



Expression:

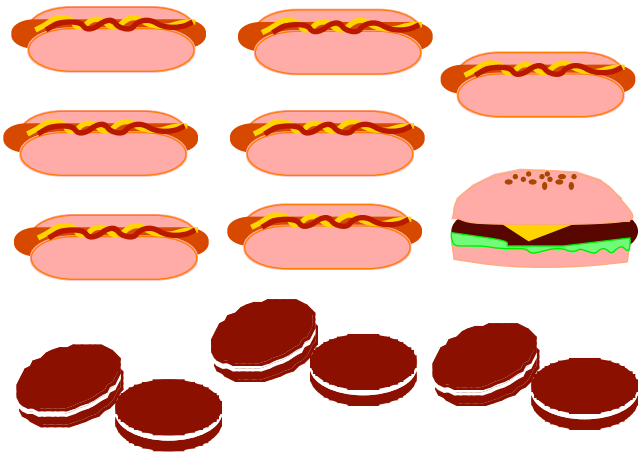
What is left?

Expression:

Subtract the expressions:

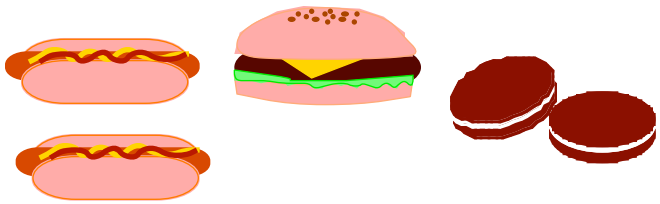
Subtract like terms:

Subtracting Expressions



Expression:

Take away



Expression:

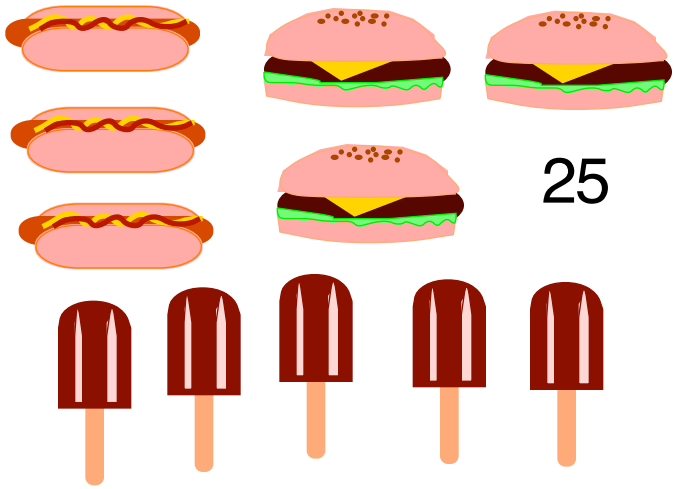
What is left?

Expression:

Subtract the expressions:

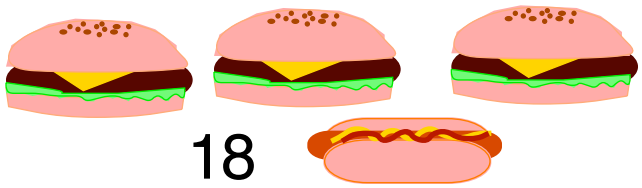
Subtract like terms:

Subtracting Expressions



Expression:

Take away



Expression:

What is left?

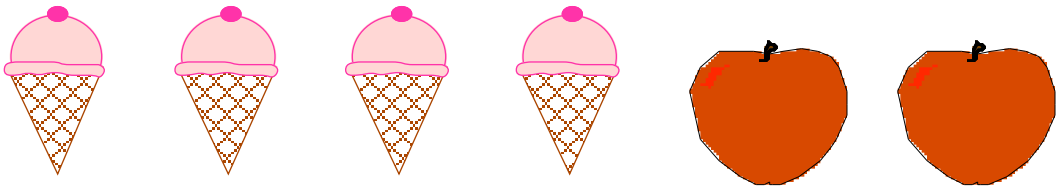
Expression:

Subtract the expressions:

Subtract like terms:

Substitution

1. Representation.



2. Write an expression for the representation.

3. Calculate the value of the expression if each food has the following price:

ice cream cost $1;

apples cost $2;

hamburgers cost $5;

hot-dogs cost $3;

pizza cost $ 4.

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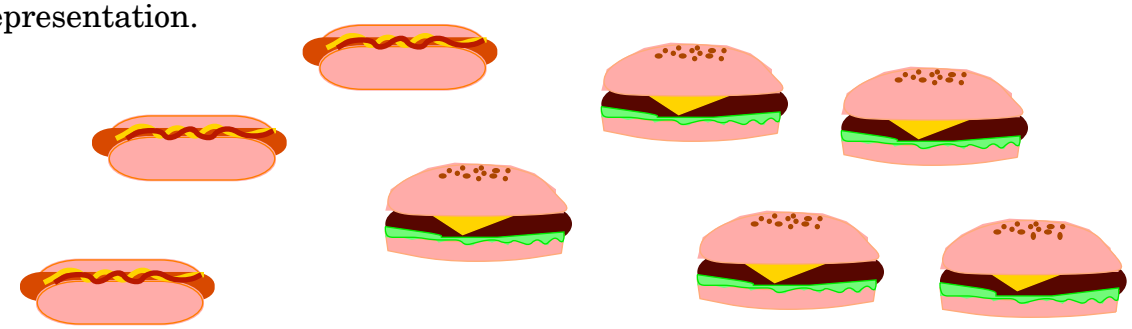

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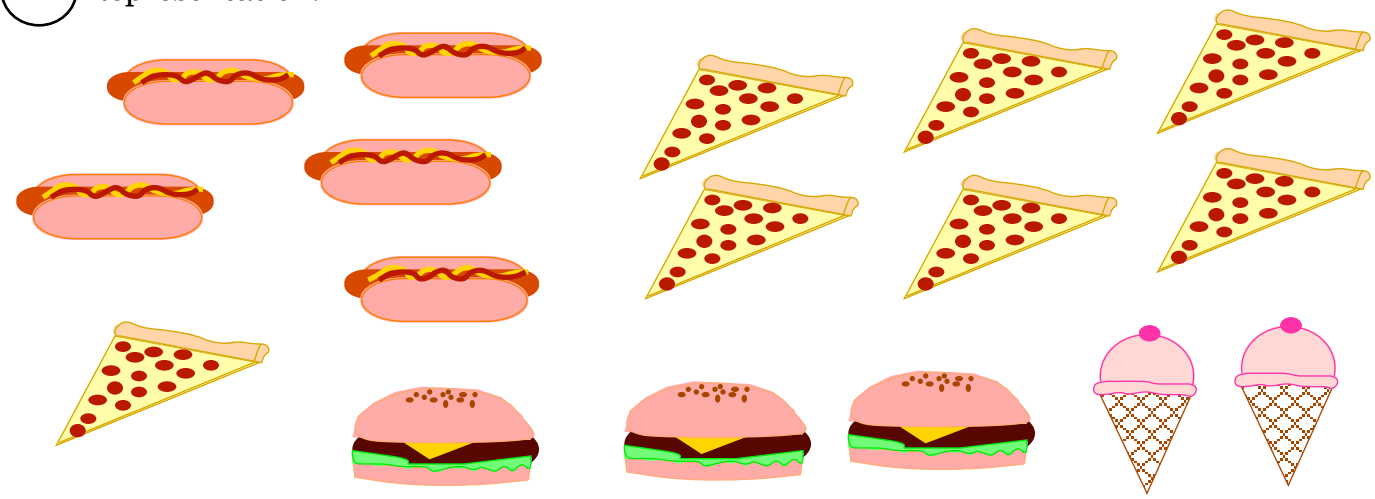

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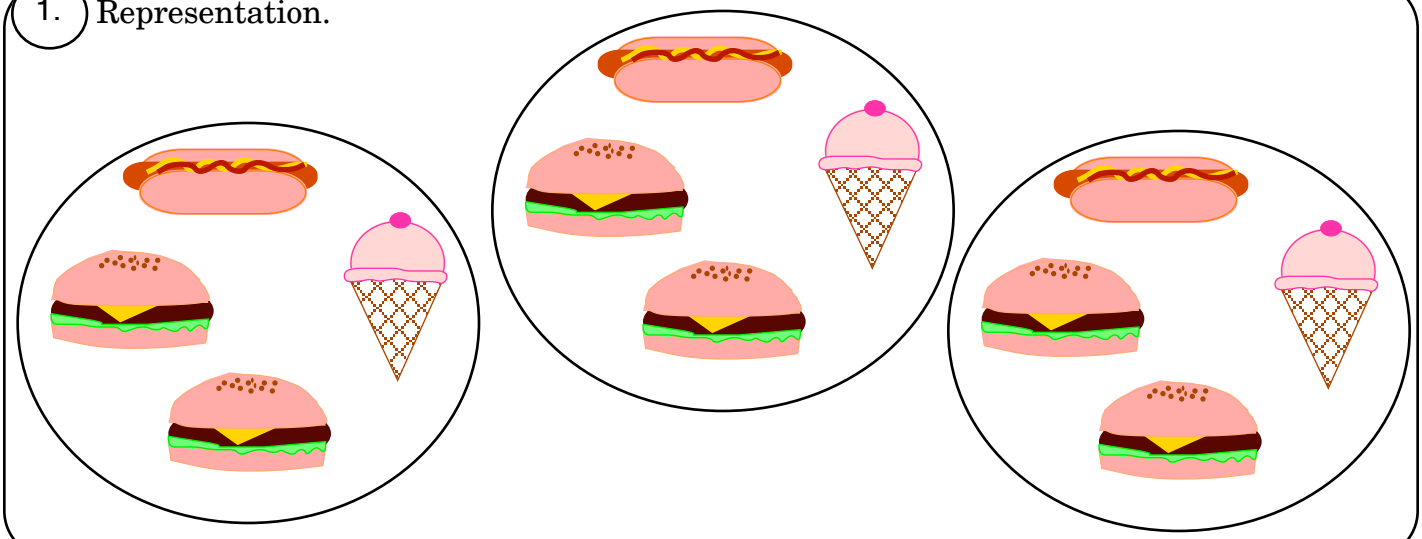

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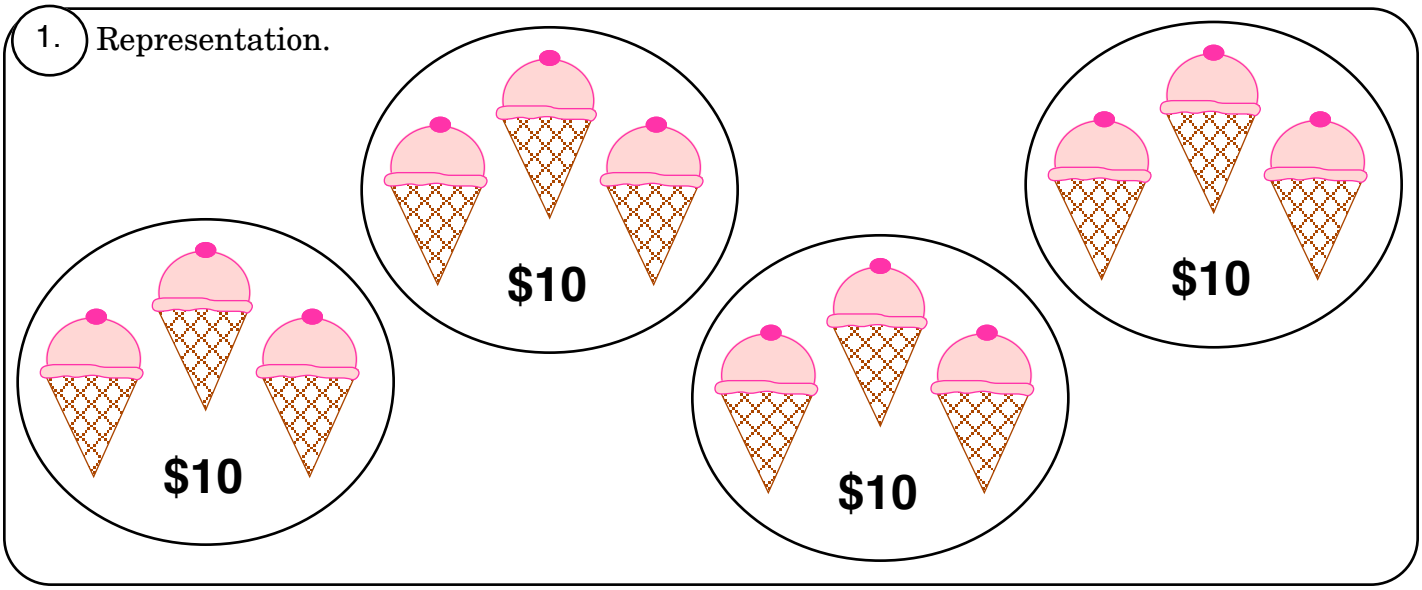

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