



























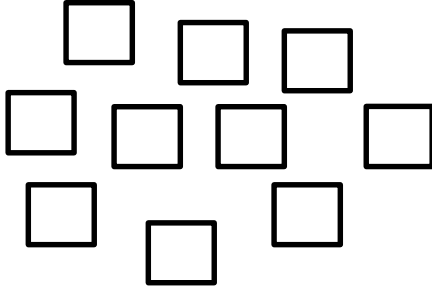




Name \_\_\_\_\_

Date \_\_\_\_\_

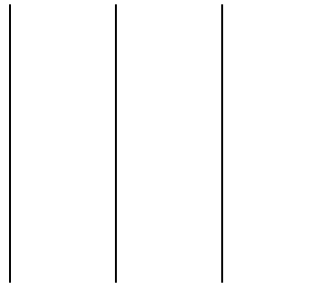
1. Create an array with the squares.



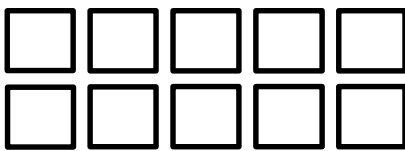
\_\_\_\_\_

\_\_\_\_\_

2. Create an array with the squares from the set above.



3. Use the array of squares to answer the questions below.



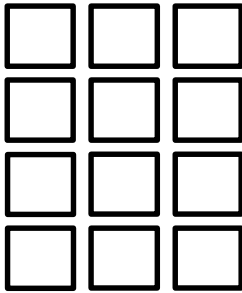
a. There are \_\_\_\_\_ squares in each row.

b. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

c. There are \_\_\_\_\_ squares in each column.

d. \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

4. Use the array of squares to answer the questions below.



a. There are \_\_\_\_ squares in one row.

b. There are \_\_\_\_ squares in one column.

c. \_\_\_\_ + \_\_\_\_ + \_\_\_\_ = \_\_\_\_

d. 3 columns of \_\_\_\_ = \_\_\_\_ rows of \_\_\_\_ = \_\_\_\_ total

5. a. Draw an array with 8 squares that has 2 squares in each column.

b. Write a repeated addition equation to match the array.

6. a. Draw an array with 20 squares that has 4 squares in each column.

b. Write a repeated addition equation to match the array.

c. Draw a tape diagram to match your repeated addition equation and array.





Draw a tape diagram for each word problem. Write a repeated addition equation to match each tape diagram.

- Each of Maria's 4 friends has 5 markers. How many markers do Maria's friends have in all?
  
  
  
  
  
  
  
  
  
  
- Maria also has 5 markers. How many markers do Maria and her friends have in all?

Draw a tape diagram and an array. Then, write a repeated addition equation to match.

- In a card game, 3 players get 4 cards each. One more player joins the game. How many total cards should be dealt now?

Name \_\_\_\_\_

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Use your square tiles to construct the following rectangles with no gaps or overlaps.  
Write a repeated addition equation to match each construction.

1. a. Construct a rectangle with 2 rows of 3 tiles.

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- b. Construct a rectangle with 2 columns of 3 tiles.

---

2. a. Construct a rectangle with 5 rows of 2 tiles.

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- b. Construct a rectangle with 5 columns of 2 tiles.

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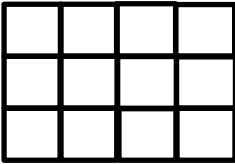
3. a. Construct a rectangle of 9 tiles that has equal rows and columns.

---

- b. Construct a rectangle of 16 tiles that has equal rows and columns.

---

4. a. What shape is the array pictured below? \_\_\_\_\_



- b. Redraw the above shape with one column removed in the space below.

- c. What shape is the array now? \_\_\_\_\_

Name \_\_\_\_\_

Date \_\_\_\_\_

Use your square tiles to construct the following arrays with no gaps or overlaps. Write a repeated addition equation to match each construction.

1. a. Place 8 square tiles in a row.

b. Construct an array with the 8 square tiles.

c. Write a repeated addition equation to match the new array.

\_\_\_\_\_

2. a. Construct an array with 12 squares.

a. Write a repeated addition equation to match the array.

\_\_\_\_\_

c. Rearrange the 12 squares into a different array.

d. Write a repeated addition equation to match the new array.

\_\_\_\_\_

3. a. Construct an array with 20 squares.
- b. Write a repeated addition equation to match the array.
- \_\_\_\_\_
- c. Rearrange the 20 squares into a different array.
- d. Write a repeated addition equation to match the new array.
- \_\_\_\_\_

4. Construct 2 arrays with 6 squares.
- a. 2 rows of \_\_\_\_\_ = \_\_\_\_\_
- b. 3 rows of \_\_\_\_\_ = 2 rows of \_\_\_\_\_
5. Construct 2 arrays with 10 squares.
- a. 2 rows of \_\_\_\_\_ = \_\_\_\_\_
- b. 5 rows of \_\_\_\_\_ = 2 rows of \_\_\_\_\_

Name \_\_\_\_\_

Date \_\_\_\_\_

1. Draw without using a square tile to make an array with 2 rows of 5.

$$2 \text{ rows of } 5 = \underline{\hspace{2cm}}$$

$$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

2. Draw without using a square tile to make an array with 4 columns of 3.

$$4 \text{ columns of } 3 = \underline{\hspace{2cm}}$$

$$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

3. Complete the following arrays without gaps or overlaps. The first tile has been drawn for you.

a. 3 rows of 4



b. 5 columns of 3



c. 5 columns of 4





Name \_\_\_\_\_

Date \_\_\_\_\_

Use your square tiles to complete the steps for each problem.

**Problem 1**

Step 1: Construct a rectangle with 4 columns of 3.

Step 2: Separate 2 columns of 3.

Step 3: Write a number bond to show the whole and two parts. Then, write a repeated addition sentence to match each part of the number bond.

**Problem 2**

Step 1: Construct a rectangle with 5 rows of 2.

Step 2: Separate 2 rows of 2.

Step 3: Write a number bond to show the whole and two parts. Write a repeated addition sentence to match each part of the number bond.

**Problem 3**

Step 1: Construct a rectangle with 5 columns of 3.

Step 2: Separate 3 columns of 3.

Step 3: Write a number bond to show the whole and two parts. Write a repeated addition sentence to match each part of the number bond.

4. Use 12 square tiles to construct a rectangle with 3 rows.
- \_\_\_\_\_ rows of \_\_\_\_\_ = 12
  - Remove 1 row. How many squares are there now? \_\_\_\_\_
  - Remove 1 column from the new rectangle you made in 4(b). How many squares are there now? \_\_\_\_\_
5. Use 20 square tiles to construct a rectangle.
- \_\_\_\_\_ rows of \_\_\_\_\_ = \_\_\_\_\_
  - Remove 1 row. How many squares are there now? \_\_\_\_\_
  - Remove 1 column from the new rectangle you made in 5(b). How many squares are there now? \_\_\_\_\_
6. Use 16 square tiles to construct a rectangle.
- \_\_\_\_\_ rows of \_\_\_\_\_ = \_\_\_\_\_
  - Remove 1 row. How many squares are there now? \_\_\_\_\_
  - Remove 1 column from the new rectangle you made in 6(b). How many squares are there now? \_\_\_\_\_

Name \_\_\_\_\_

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Cut out Rectangles A, B, and C. Then, cut according to directions. Answer each of the following using Rectangles A, B, and C.<sup>1</sup>

1. Cut out each row of Rectangle A.
  - a. Rectangle A has \_\_\_\_\_ rows.
  - b. Each row has \_\_\_\_\_ squares.
  - c. \_\_\_\_\_ rows of \_\_\_\_\_ = \_\_\_\_\_
  - d. Rectangle A has \_\_\_\_\_ squares.
  
2. Cut out each column of Rectangle B.
  - a. Rectangle B has \_\_\_\_\_ columns.
  - b. Each column has \_\_\_\_\_ squares.
  - c. \_\_\_\_\_ columns of \_\_\_\_\_ = \_\_\_\_\_
  - d. Rectangle B has \_\_\_\_\_ squares.

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<sup>1</sup>Note: This Problem Set is used with a template of three identical 2 by 4 arrays. These arrays are labeled as Rectangles A, B, and C.

3. Cut out each square from both Rectangles A and B.
- Construct a new rectangle using all 16 squares.
  - My rectangle has \_\_\_\_\_ rows of \_\_\_\_\_.
  - My rectangle also has \_\_\_\_\_ columns of \_\_\_\_\_.
  - Write two repeated addition number sentences to match your rectangle.
4. Construct a new array using the 24 squares from Rectangles A, B, and C.
- My rectangle has \_\_\_\_\_ rows of \_\_\_\_\_.
  - My rectangle also has \_\_\_\_\_ columns of \_\_\_\_\_.
  - Write two repeated addition number sentences to match your rectangle.

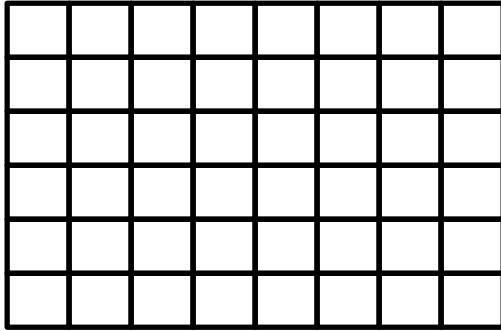
Extension: Construct another array using the squares from Rectangles A, B, and C.

- My rectangle has \_\_\_\_\_ rows of \_\_\_\_\_.
- My rectangle also has \_\_\_\_\_ columns of \_\_\_\_\_.
- Write two repeated addition number sentences to match your rectangle.

Name \_\_\_\_\_

Date \_\_\_\_\_

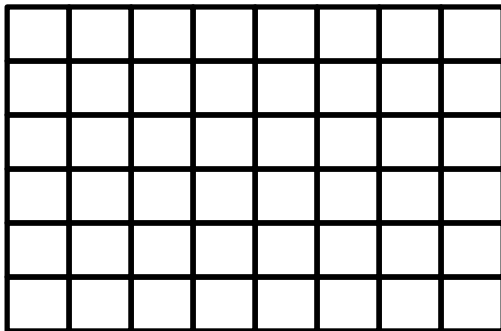
1. Shade in an array with 2 rows of 3.



Write a repeated addition equation for the array.

\_\_\_\_\_

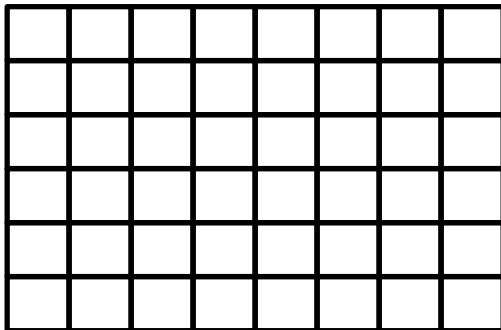
2. Shade in an array with 4 rows of 3.



Write a repeated addition equation for the array.

\_\_\_\_\_

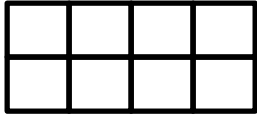
3. Shade in an array with 5 columns of 4.



Write a repeated addition equation for the array.

\_\_\_\_\_

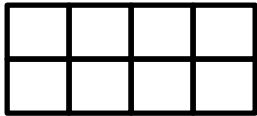
4. Draw one more column of 2 to make a new array.



Write a repeated addition equation for the new array.

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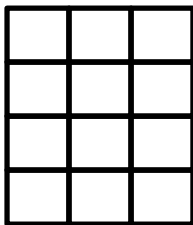
5. Draw one more row of 4 and then one more column to make a new array.



Write a repeated addition equation for the new array.

---

6. Draw one more row and then two more columns to make a new array.



Write a repeated addition equation for the new array.

---

Name \_\_\_\_\_

Date \_\_\_\_\_

Use your square tiles and grid paper to complete the following problems.

**Problem 1**

- Cut out 10 square tiles.
- Cut one of your square tiles in half diagonally.
- Create a design.
- Shade in your design on grid paper.

**Problem 2**

- Use 16 square tiles.
- Cut two of your square tiles in half diagonally.
- Create a design.
- Shade in your design on grid paper.
- Share your second design with your partner.
- Check each other's copy to be sure it matches the tile design.

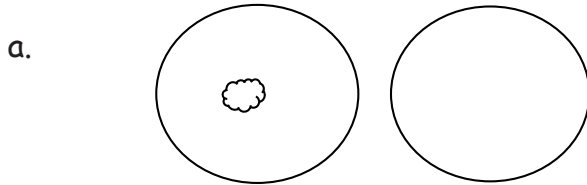
**Problem 3**

- Create a 3 by 3 design with your partner in the corner of a new piece of grid paper.
- With your partner, copy that design to fill the entire paper.

Name \_\_\_\_\_

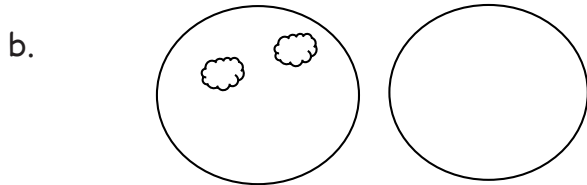
Date \_\_\_\_\_

1. Draw to double the group you see. Complete the sentence, and write an addition equation.



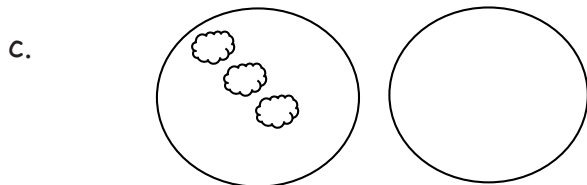
There is \_\_\_\_\_ cloud in each group.

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_



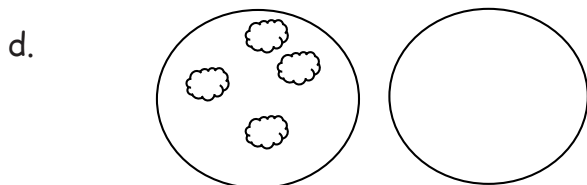
There are \_\_\_\_\_ clouds in each group.

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_



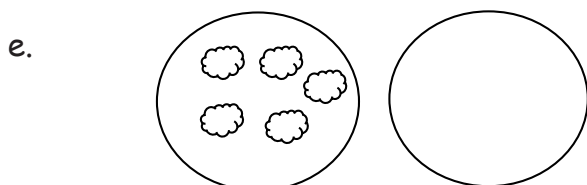
There are \_\_\_\_\_ clouds in each group.

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_



There are \_\_\_\_\_ clouds in each group.

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_



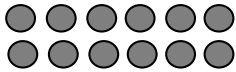
There are \_\_\_\_\_ clouds in each group.

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_



2. Draw an array for each set. Complete the sentences. The first one has been drawn for you.

a. **2 rows of 6**



2 rows of 6 = \_\_\_\_\_

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

6 doubled is \_\_\_\_\_.

b. **2 rows of 7**

2 rows of 7 = \_\_\_\_\_

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

7 doubled is \_\_\_\_\_.

c. **2 rows of 8**

2 rows of 8 = \_\_\_\_\_

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

8 doubled is \_\_\_\_\_.

d. **2 rows of 9**

2 rows of 9 = \_\_\_\_\_

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

9 doubled is \_\_\_\_\_.

e. **2 rows of 10**

2 rows of 10 = \_\_\_\_\_

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

10 doubled is \_\_\_\_\_.

3. List the totals from Problem 1. \_\_\_\_\_

List the totals from Problem 2. \_\_\_\_\_

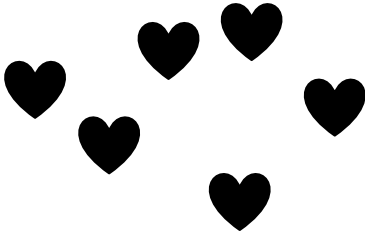
Are the numbers you have listed even or not even? \_\_\_\_\_

Explain in what ways the numbers are the same and different.

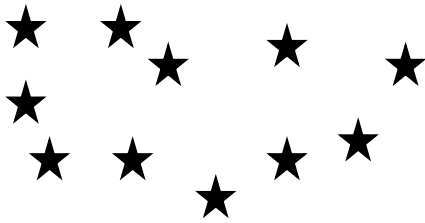
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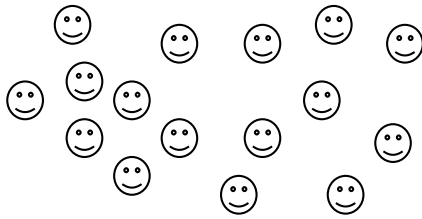
1. Pair the objects to decide if the number of objects is even.



Even/Not Even

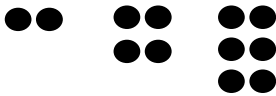


Even/Not Even

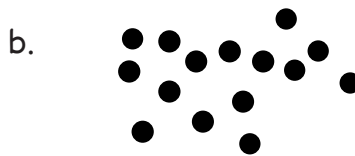
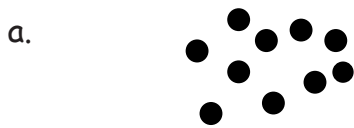


Even/Not Even

2. Draw to continue the pattern of the pairs in the space below until you have drawn 10 pairs.



3. Write the number of dots in each array in Problem 2 in order from least to greatest.
4. Circle the array in Problem 2 that has 2 columns of 7.
5. Box the array in Problem 2 that has 2 columns of 9.
6. Redraw the following sets of dots as columns of two or 2 equal rows.



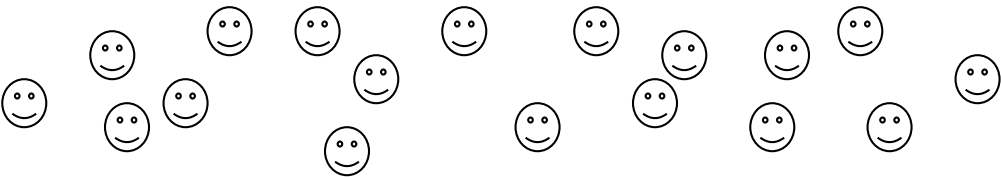
There are \_\_\_\_\_ dots.

There are \_\_\_\_\_ dots.

Is \_\_\_\_\_ an even number? \_\_\_\_\_

Is \_\_\_\_\_ an even number? \_\_\_\_\_

7. Circle groups of two. Count by twos to see if the number of objects is even.



a. There are \_\_\_\_\_ twos. There are \_\_\_\_\_ left over.

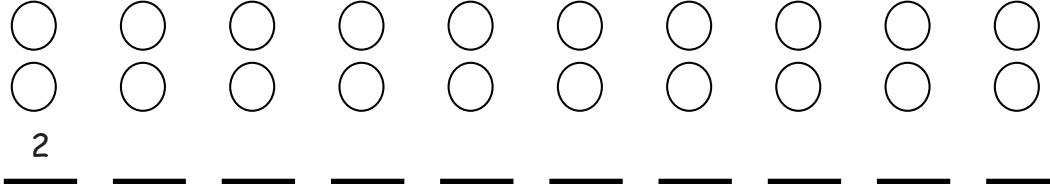
b. Count by twos to find the total.  
 \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

c. This group has an even number of objects: True or False

Name \_\_\_\_\_

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1. Skip-count the columns in the array. The first one has been done for you.



2. a. Solve.

$1 + 1 =$  \_\_\_\_\_

$2 + 2 =$  \_\_\_\_\_

$3 + 3 =$  \_\_\_\_\_

$4 + 4 =$  \_\_\_\_\_

$5 + 5 =$  \_\_\_\_\_

$6 + 6 =$  \_\_\_\_\_

$7 + 7 =$  \_\_\_\_\_

$8 + 8 =$  \_\_\_\_\_

$9 + 9 =$  \_\_\_\_\_

$10 + 10 =$  \_\_\_\_\_

b. Explain the connection between the array in Problem 1 and the answers in Problem 2(a).

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3. a. Fill in the missing numbers on the number path.

20, 22, 24, \_\_\_\_\_, 28, 30, \_\_\_\_\_, \_\_\_\_\_, 36, \_\_\_\_\_, 40, \_\_\_\_\_, \_\_\_\_\_, 46, \_\_\_\_\_, \_\_\_\_\_

b. Fill in the odd numbers on the number path.

0, \_\_\_\_\_, 2, \_\_\_\_\_, 4, \_\_\_\_\_, 6, \_\_\_\_\_, 8, \_\_\_\_\_, 10, \_\_\_\_\_, 12, \_\_\_\_\_, 14, \_\_\_\_\_, 16, \_\_\_\_\_, 18, \_\_\_\_\_, 20, \_\_\_\_\_

4. Write to identify the **bold** numbers as even or odd. The first one has been done for you.

<p>a.</p> $\mathbf{6} + 1 = \mathbf{7}$ $\underline{\text{even}} + 1 = \underline{\text{odd}}$	<p>b.</p> $\mathbf{24} + 1 = \mathbf{25}$ $\underline{\quad} + 1 = \underline{\quad}$	<p>c.</p> $\mathbf{30} + 1 = \mathbf{31}$ $\underline{\quad} + 1 = \underline{\quad}$
<p>d.</p> $\mathbf{6} - 1 = \mathbf{5}$ $\underline{\quad} - 1 = \underline{\quad}$	<p>e.</p> $\mathbf{24} - 1 = \mathbf{23}$ $\underline{\quad} - 1 = \underline{\quad}$	<p>f.</p> $\mathbf{30} - 1 = \mathbf{29}$ $\underline{\quad} - 1 = \underline{\quad}$

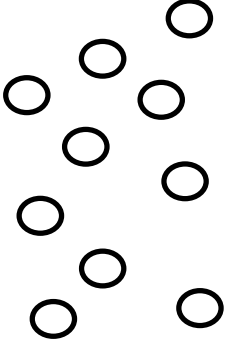
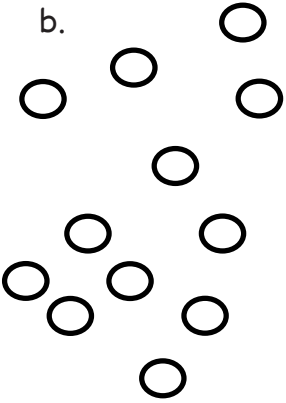
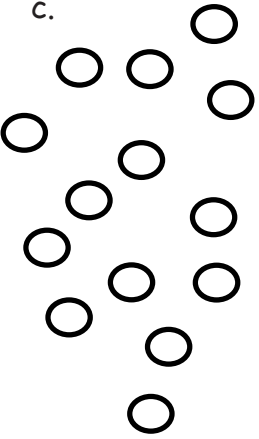
5. Are the **bold** numbers even or odd? Circle the answer, and explain how you know.

<p>a.</p> $\mathbf{28}$ <p>even/odd</p>	<p>Explanation:</p>
<p>b.</p> $\mathbf{39}$ <p>even/odd</p>	<p>Explanation:</p>
<p>c.</p> $\mathbf{45}$ <p>even/odd</p>	<p>Explanation:</p>
<p>d.</p> $\mathbf{50}$ <p>even/odd</p>	<p>Explanation:</p>

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Date \_\_\_\_\_

1. Use the objects to create an array.

<p>a.</p> 	<p>Array</p>          <p>There are an even/odd (circle one) number of circles.</p>	<p>Redraw your picture with 1 <i>less</i> circle.</p>          <p>There are an even/odd (circle one) number of circles.</p>
<p>b.</p> 	<p>Array</p>          <p>There are an even/odd (circle one) number of circles.</p>	<p>Redraw your picture with 1 <i>more</i> circle.</p>          <p>There are an even/odd (circle one) number of circles.</p>
<p>c.</p> 	<p>Array</p>          <p>There are an even/odd (circle one) number of circles.</p>	<p>Redraw your picture with 1 <i>less</i> circle.</p>          <p>There are an even/odd (circle one) number of circles.</p>

2. Solve. Tell if each number is odd (O) or even (E). The first one has been done for you.

a.  $6 + 4 = 10$   
 $\underline{E} + \underline{E} = \underline{E}$

d.  $14 + 8 = \underline{\hspace{2cm}}$   
 $\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

b.  $17 + 2 = \underline{\hspace{2cm}}$   
 $\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

e.  $3 + 9 = \underline{\hspace{2cm}}$   
 $\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

c.  $11 + 13 = \underline{\hspace{2cm}}$   
 $\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

f.  $5 + 14 = \underline{\hspace{2cm}}$   
 $\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

3. Write two examples for each case. Write if your answers are even or odd. The first one has been started for you.

a. Add an even number to an even number.

$\underline{32 + 8 = 40 \text{ even}}$   $\underline{\hspace{10cm}}$

b. Add an odd number to an even number.

$\underline{\hspace{10cm}}$   $\underline{\hspace{10cm}}$

c. Add an odd number to an odd number.

$\underline{\hspace{10cm}}$   $\underline{\hspace{10cm}}$