## Patterns in Adding

$\square$ Separate.
$\square$ Write the number in different ways.

$\bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet$
$\bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet$
$\bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet$
$\bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet$
$\bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet$
$10=1+$ $\qquad$
$10=2+$ $\qquad$
$10=3+$ $\qquad$
$10=4+$
$10=5+$
$\qquad$
$\qquad$
$\bullet \bullet \bullet \bullet \bullet \bullet \bullet$
$\bullet \bullet \bullet \bullet \bullet \bullet \bullet$
$\bullet \bullet \bullet \bullet \bullet ~$

$$
\begin{aligned}
& 7=1+ \\
& 7=2+ \\
& 7=3+
\end{aligned}
$$

$\qquad$


$$
\begin{aligned}
& 8=1+ \\
& 8=2+ \\
& 8=3+ \\
& 8=4+
\end{aligned}
$$

$\qquad$
$\bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet$
$\qquad$
$\qquad$

## Adding Tens and Ones

$\square$ Write the number as a sum of IOs and Is.
$32=\underline{10+10+10+1+1}$
$41=$ $\qquad$

$$
13=
$$

$22=$ $\qquad$
$\square$ We can write $24=20+4$. Write the number in the same way.
$35=30+5$
$81=$ $\qquad$ $56=$
$92=$ $\qquad$
$\qquad$
$\square$ Add.
$40+5=\underline{45}$
$8+60=$
$30+8=$ $\qquad$ $9+10=$ $\qquad$

$$
\begin{aligned}
& 70+1= \\
& 4+50=
\end{aligned}
$$

$\square$
$30+8=$

$$
7+90=
$$

$$
q+70=
$$

$\qquad$

$$
90+9=
$$

$\qquad$
$\square$ Add.

$$
\begin{gathered}
5+2=1+1+1+1+1+1+1= \\
50+20=10+10+10+10+10+10+10=
\end{gathered}
$$

$$
4+4=1+1+1+1+1+1+1+1=
$$

$$
40+40=10+10+10+10+10+10+10+10=
$$

$\qquad$

| $2+3$ | $=$ | $1+1$ | + |
| :---: | :---: | :---: | :---: |
| $20+30$ | $=$ | $10+10$ | $+1+1$ |

$$
\begin{array}{r|r|r}
2+6 & = & \begin{aligned}
4+1 & = \\
20+60 & =
\end{aligned} \quad \begin{array}{r}
5+4= \\
40+10
\end{array}= \\
& &
\end{array}
$$

$\qquad$
$\qquad$

$$
\begin{aligned}
1+5 & = \\
10+50 & =
\end{aligned}
$$

$$
\begin{aligned}
3+3 & = \\
30+30 & =
\end{aligned}
$$

$$
\begin{array}{r}
3+4= \\
30+40=
\end{array}
$$

$\qquad$
$\qquad$

$$
\begin{aligned}
1+3+2 & = \\
10+30+20 & =
\end{aligned} \begin{aligned}
& 2+3+2+1= \\
& 20+30+20+10=
\end{aligned}
$$

$\qquad$
$\qquad$

## Adding in Two Ways

$\square$ Move the line one dot to the right.
$\square$ Write the new addition sentence.

$$
\begin{aligned}
& \text { - - ••• } 2+4=6 \\
& \text { - - | } \bullet \bullet 3+3=6
\end{aligned}
$$

$$
\bullet \bullet \bullet \bullet \quad 1+4=5
$$



How does the first number change? It goes up by $l$.
How does the second number change? $\qquad$
What happens to the total?
Why does that happen?
$\square$ Add and subtract I to make a new number sentence.

$$
\begin{array}{r}
{ }^{2}+\left.\right|_{\mid} ^{5}-1 \\
+1 \\
\boxed{3}+4
\end{array}
$$



$$
\begin{array}{r}
{ }^{8}+\left.\right|^{3}=11 \\
\left.\underline{+1}\right|^{-1} \\
\square+\square
\end{array}
$$


$\square$ Finish the addition sentence.

$$
6+I I=7+
$$

$\qquad$

$$
8+4=9+
$$

$\qquad$
$\square$ Draw a model.
$\square$ Move the line one dot to the $\overleftarrow{\square} \mathrm{eft}$.
$\square$ Write the new addition sentence.
$\bullet \bullet \bullet \bullet \bullet$
$\bullet \bullet \bullet \bullet-1+5=6$

- $\mid \bullet \bullet \quad 2+3=5$
$4+2=6$

$$
4+1=5
$$

$\qquad$
$2+2=4$
$1+2=3$
$\qquad$
$2+1=3$
$4+0=4$
$\qquad$

How does the first number change?
How does the second number change? $\qquad$
What happens to the total?
挂Why does that happen?
$\square$ Change both numbers in opposite ways.
$\square$ Complete the two addition sentences.


In each question, did the total change?

## Using 10 to Add

$\square$ Use the group of 10 to help you add.

$9+7=10+$ $\qquad$ $=$ $\qquad$
$7+5=10+\ldots=$
$\qquad$
$7+5=10+\ldots=$
$\qquad$


$8+6=10+$ $\qquad$

$8+8=\ldots+10=$
$\qquad$
$8+8=\ldots+10=$ $\qquad$
$\qquad$

$\square$ Sara groups 10 in two ways. Does she get the same answer?

$\square$ Circle a group of 10 .
$\square$ Use 10 to add.


## Using the Nearest IO to Add

$\square$ Use 10 to add.

\[

\]

\[

\]



$$
7+9=10+\ldots=
$$

$\square$ Draw the circles, then add.



$$
9+5=10+\ldots=
$$

Does using IO make adding easier? $\qquad$
Explain.
Which two answers are the same? Why did that happen?
$\square$ What makes 10 with the first number?
Subtract that amount from the second number.
$\square$ Complete the addition sentences.


$$
q+5=10+
$$

$\qquad$
$\qquad$

$$
8+4=10+\ldots=
$$

$9+4=\ldots+\ldots$
$8+6=$ $\qquad$ $+$ $\qquad$ $=$
$\square$ Add I to one of the numbers.
$\square$ Subtract I from the other number.
$\square$ Complete the new addition sentence.

$$
\begin{aligned}
& \begin{array}{l}
32+9 \\
31
\end{array}+\underline{10}=41 \\
= & 7+29 \\
= & +\ldots
\end{aligned}
$$

$$
=l_{-}+
$$

$\qquad$

$$
27+19
$$

$$
=\ldots+
$$

$19+16$

$$
29+6
$$

$=]_{\square}+\ldots=$

$$
=\ldots+
$$

$$
18+q
$$

$$
q+36
$$

$$
=l_{-}+\ldots
$$

$$
=\ldots+
$$

$$
38+19
$$

$$
=\ldots+\ldots=
$$

L Sam has to solve $27+29$. He says $26+30$ has the same answer. Explain why he is correct.
通 Which problem is easier, $27+29$ or $26+30$ ? Explain.
$\square$ Make a new addition problem by adding and subtracting 2. $\square$ Solve the new addition problem.


## Using Tens and Ones to Add

How many tens and ones altogether?
$\square$ Add.


$14+13=$

$\square$ Now draw the blocks and add.
$12+12 \ldots$ _ tens +__ ones
$\square$ Make your own problem.

$$
\begin{array}{llll}
\square+\quad \text { _____ tens }+ \text { ones } \\
+\quad & = &
\end{array}
$$

$\square$ Add by separating the tens and ones.
$\begin{array}{r}23=20+3 \\ +34=30+4 \\ \hline 57\end{array}=\begin{aligned} & 20+7\end{aligned}$

$$
27=20+\square
$$

$$
\frac{+22}{\square}=\frac{20+\square}{40+\square}
$$

$$
\begin{array}{r}
15=\square+\square \\
+23=\frac{\square}{\square \square}=\square
\end{array}
$$



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$$
\begin{aligned}
& 22=\square+\square \\
& 14 \\
&+21=\frac{\square}{\square}+\square \\
& \hline \square=\square \\
& \hline \square \square \square
\end{aligned}
$$

$$
\begin{array}{r}
34=30+4 \\
+\quad 15 \\
\hline \square \longleftarrow 40+5 \\
\hline \square 40+9
\end{array}
$$

$$
\begin{array}{r}
35=\square+\square \\
+42=\square \\
\hline \square
\end{array}
$$

$$
\begin{array}{r}
26=\square+\square \\
+13=\square+\square \\
\hline \square
\end{array}
$$

$$
\begin{array}{r}
26=\square+\square \\
+33=\square \\
\hline \square
\end{array}
$$

$$
\begin{array}{r}
\mathrm{II}=\square+\square \\
22 \\
+33=\frac{\square}{\square}+\square \\
\frac{\square}{\square}+\square \square
\end{array}
$$

$\square$ Add by using a tens and ones chart.

| 35 |  |
| :---: | :---: | :---: |
| +32 |  |
| 67 |  |
|  | tens ones <br> 3 5 <br> 3 2 <br> 6 7 |


| 24 |  |  |
| :---: | :---: | :---: |
| +41 |  |  |
| $\square$ | tens | ones |
| 2 | 4 |  |
|  | 4 | 1 |
|  |  |  |


| 46 |  |  |
| ---: | ---: | ---: |
| $+\quad 31$ |  |  |
| $\square$ | tens | ones |
|  |  |  |
|  |  |  |


| 43 |  |  |
| ---: | :--- | :--- |
| +23 |  |  |
| $\square$ | tens | ones |
|  |  |  |
|  |  |  |
|  |  |  |


|  | tens | ones |
| ---: | ---: | ---: |
| 27 |  |  |
| +21 |  |  |
| $+\quad 51$ |  |  |
| $\square$ |  |  |
| $\square$ |  |  |


|  | tens ones <br> 31  <br> +42  <br> +14  <br> $\square$  <br>   |  |
| ---: | ---: | ---: |


| tens ones |  |
| :---: | :---: |
| 3 2 <br> +2 7 <br>   |  |



| tens ones |  |
| :---: | :---: |
| 5 | 5 |
| 2 | 3 |
|  |  |


| tens ones |  |
| :--- | :---: |
| 2 2 <br>  1$\| 3$ |  |

进 37

$$
54 \quad 23
$$

$+22+16+34$

$$
31
$$

$$
+62+34+43
$$

## Many Ways to Write a Number

$\square$ Write 53 in many ways.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 28 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |

$$
5 \text { tens }+\ldots \text { ones }
$$

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |

tens + $\qquad$ ones

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |  | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |  | 20 |
| 2 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |  | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 3 |  | 40 |
| 4 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 4 |  |  |
| 5 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 |  |  |

tens + $\qquad$ ones
$\square$ Write the number in many ways.


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## Regrouping

$\square$ Group 10 ones blocks together．
$\square$ Add．

ㅁロロロロ
6
ㅁำロロロロロ 8

$$
6+8=10+\ldots=
$$


5
$\square \square \square \square \square \square \square \square$ 8

$$
5+8=10+
$$

$\qquad$ $=$

ㅁำดロロロロ
8
4

$$
8+4=10+\ldots=
$$



$$
7+7=10+\ldots=
$$

$\square$ Group IO ones blocks together．

## How many tens and ones？

$\square$ Add．

> 14
> +
> 17
> $=$
> 31


|  | प111111］ |
| :---: | :---: |
| ПППППい |  |
| ㅁํㅁํㅁㅁㅁ | ㅁำロロ |

18
$+$
25
$=$

प1111111 प11111111

메111111

पाாाாா1
$36+46=$
$\square$ Trade groups of $I 0$ ones for tens.
$\square$ Regroup in the next row.

| tens | ones |
| :---: | :---: |
| 4 | 27 |
| 6 | 7 |


| प111111 |
| :---: |
| प1111111] |
|  |
| प11111111 |

ㅁㅁㅁㅁㅁㅁㅁㅁ



| tens | ones |
| :---: | :---: |
| 3 | 12 |
|  |  |



| tens | ones |
| :---: | :---: |
| 5 | 21 |
|  |  |


| $\square 1$ | 뭄ㅁ |
| :---: | :---: |
| प1111111] | 맴ㅁ |
| प\|11|11] | 맴ㅁ |
| प11111 | ㅁㅁㅁ |
|  |  |


| tens | ones |
| :---: | :---: |
| 3 | 15 |
|  |  |

$\square$ Add the tens and ones.
$\square$ Regroup in the next row.
$\square$ Write the answer.

| tens | ones |
| :---: | :---: |
| 1 | 6 |
| 5 | 5 |
| 6 | 11 |
| 7 | 1 |$\quad$|  |
| :---: |
| +55 |


| tens | ones |
| :---: | :---: |
| 1 | 2 |
| 2 | 9 |
|  |  |
|  |  |$\quad$| 12 |
| :---: |
| +29 |
| $\square$ |


| tens | ones |
| :---: | :---: |
| 2 | 5 |
| 3 | 8 |
|  |  |
|  |  |$\quad$| 25 |
| ---: |
| +38 |
| $\square$ |


| tens | ones |
| :---: | :---: |
| 2 | 8 |
| 2 | 6 |
|  |  |
|  |  |


| 28 |
| ---: |
| $+\quad 26$ |
| $\square$ |

## The Standard Algorithm for Addition

$\square$ Add the ones.
$\square$ Write the tens digit in the tens column.
$\square$ Write the ones digit in the ones column.

$$
\begin{gathered}
5+9=\square 4 \\
\text { tens ones } \\
\begin{array}{|l}
1 \\
1 \\
+\quad 2 \\
+\quad 9 \\
\hline \square \square
\end{array}
\end{gathered}
$$

$7+5=\square \square$
tens ones


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$$
\begin{gathered}
3+8=\square \square \\
\text { tens ones } \\
\square \quad 3 \\
2 \quad 3 \\
+\quad 3 \quad 8 \\
\hline \square \square
\end{gathered}
$$

$6+\mathrm{q}=\square \square$
tens ones


$$
\_^{+}+=\square \square
$$

tens ones

$\square$ Add the ones first.
$\square$ Then add the tens to find the total.

$\square$ Add. Regroup when you need to.


Liz added the tens before the ones.
$\square$ Circle the answers she got wrong.


挂 Add.
$29+14$
$37+46$
$48+23$
$55+39$

## Doubles

$\square$ Draw the same number of dots on the other side.
$\square$ Write a doubles sentence.


10 is double 5

$\qquad$ is double $\qquad$

$\qquad$ is double $\qquad$

$\qquad$ is double 0
$\square$ Write an addition sentence for the double.

$\qquad$ $+$ $\qquad$
$\qquad$

$\xrightarrow{+}$
$+\quad=$ $\qquad$

$+$
= $\qquad$

$$
\ldots+\ldots=2
$$

$$
\ldots+\ldots=8
$$

## Using Doubles to Add

$\square$ Double, then add I.


## Bonus

Find $30+31$.
$\square$ Double, then subtract I.


## Bonus

道 Find $40+39$.
$\square$ Write how many more or less.
$\square$ Find the double.
$\square$ Add.

$$
4+5 \text { is } \frac{\text { I more than }}{4+4=\boxed{8} \text { so } 4+5=q^{4}}
$$

$$
\begin{aligned}
& 8+q \text { is } \\
& q+q=\quad \text { so } 8+q=\ldots
\end{aligned}
$$

$$
\begin{aligned}
& 8+7 \text { is } \\
& 8+8=\quad \text { so } 8+7=\ldots
\end{aligned}
$$

$$
\begin{aligned}
6+7 & \text { is } \\
6+6=\ldots & \text { so } 6+7=\ldots
\end{aligned} 6+6
$$

$$
\begin{aligned}
& 9+10 \text { is } \\
& 10+10=\ldots \\
& \text { so } q+10=\ldots
\end{aligned}
$$

$7+6$ is $\qquad$

$$
\text { so } 7+6=
$$

Which two questions have the same answer? Why did that happen?

