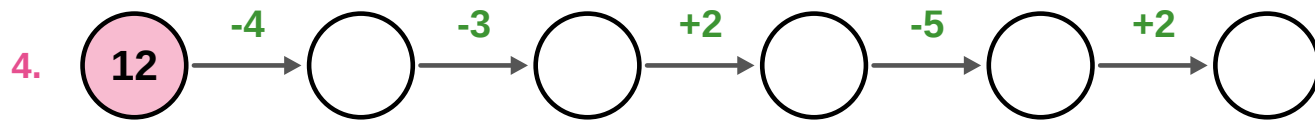


Number Chains: Add and Take Away Within 20

Name: _____

Date: _____

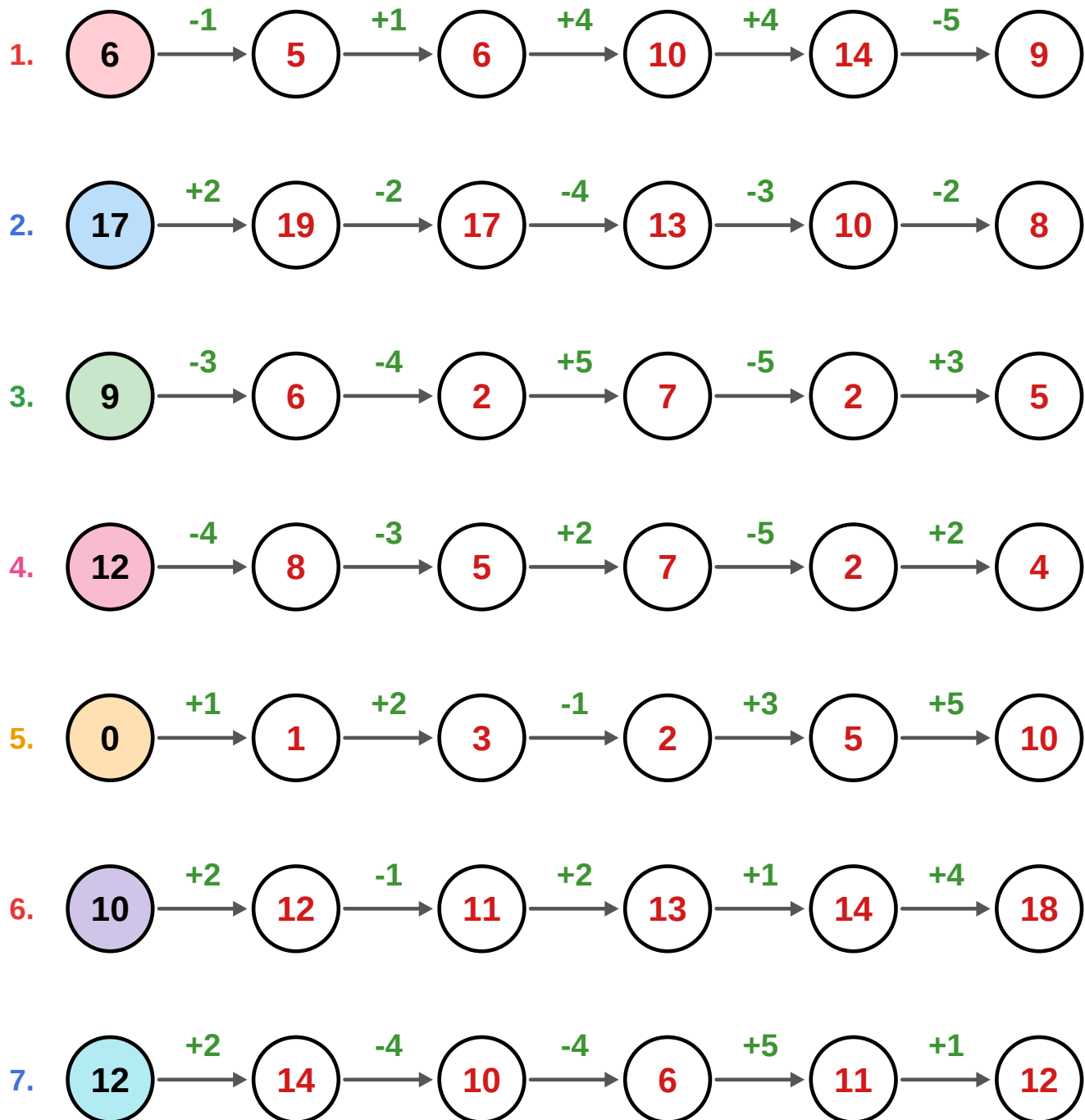
Start with the colored number. Follow the arrows and write each new number in the next circle.



Number Chains: Add and Take Away Within 20

Answer Key

Start with the colored number. Follow the arrows and write each new number in the next circle.



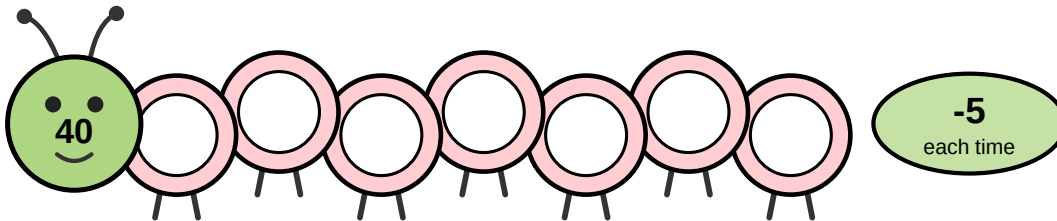
Caterpillar Number Chains

Name: _____

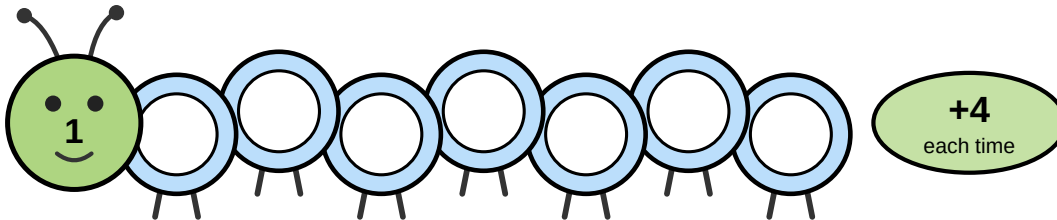
Date: _____

The number on the head is the start. Use the rule on the leaf to fill in every body part.

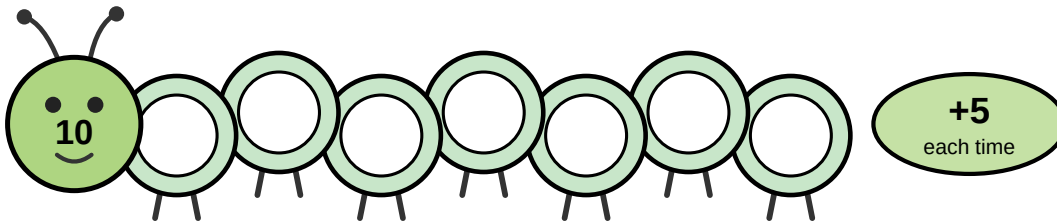
1.



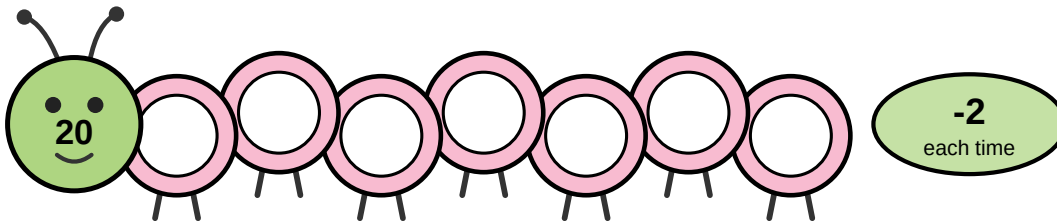
2.



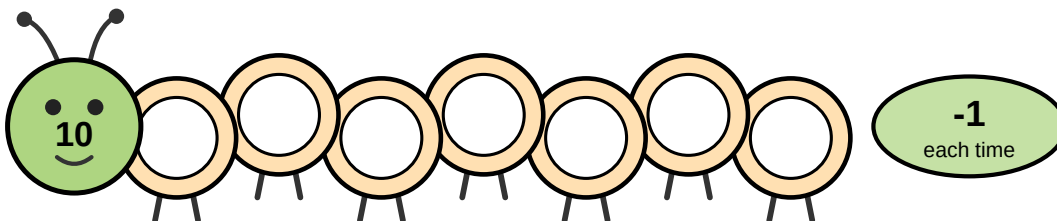
3.



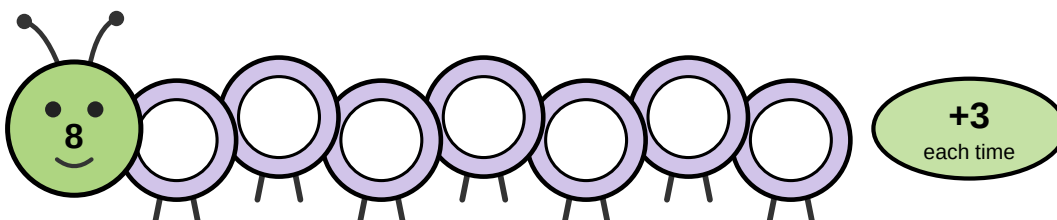
4.



5.



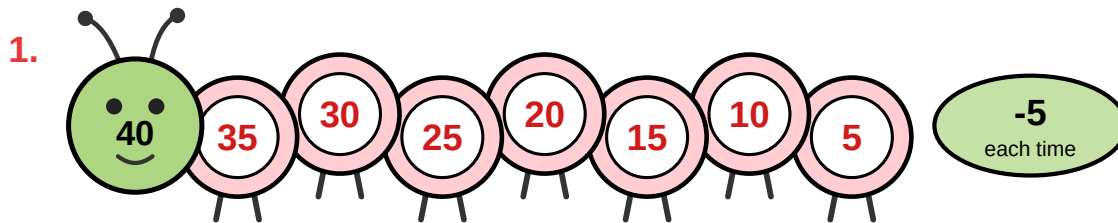
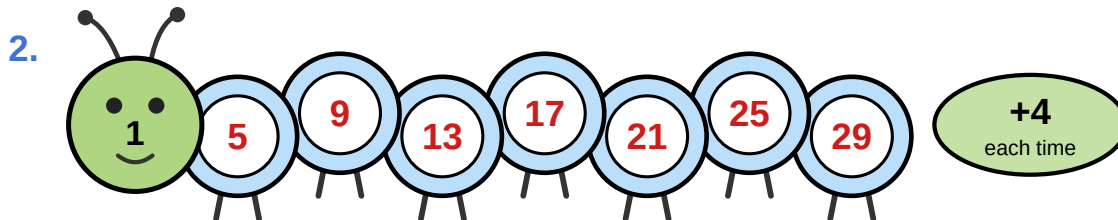
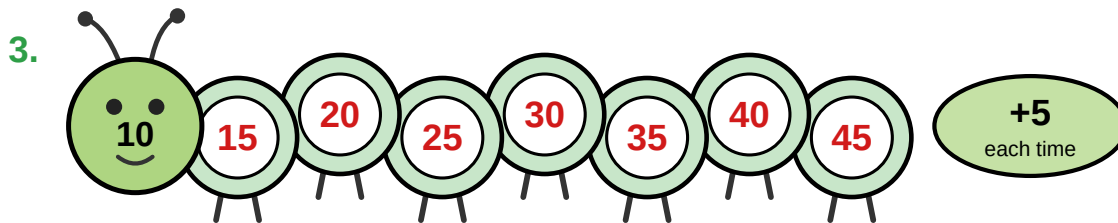
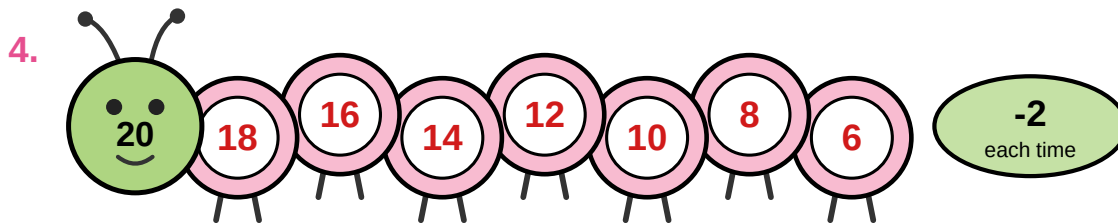
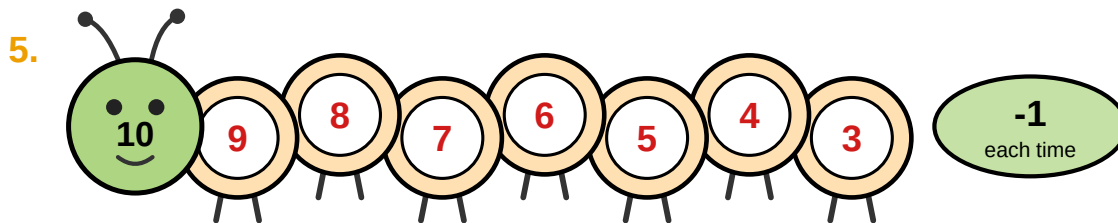
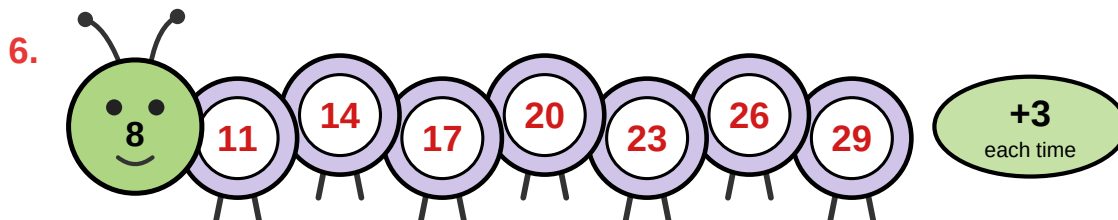
6.



Caterpillar Number Chains

Answer Key

The number on the head is the start. Use the rule on the leaf to fill in every body part.



Number Loops That Come Back to the Start

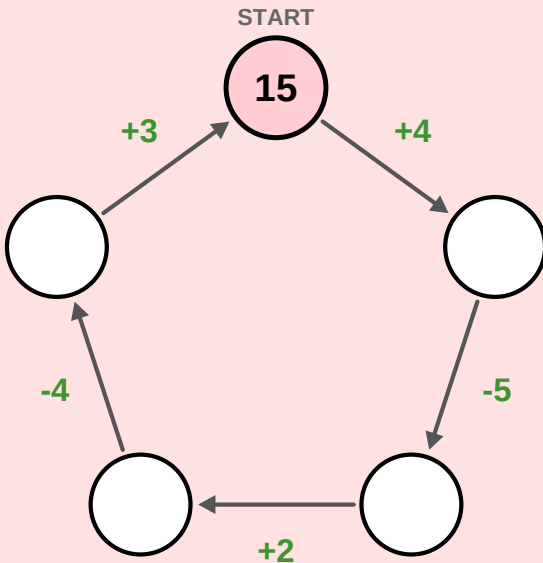
Name: _____

Date: _____

Start at START and go around the loop. If you do every step right, you land on the start number again.

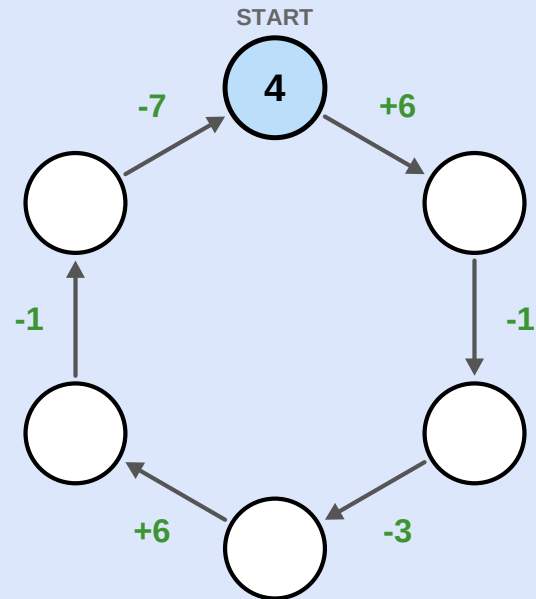
1.

Do you get back to the start?



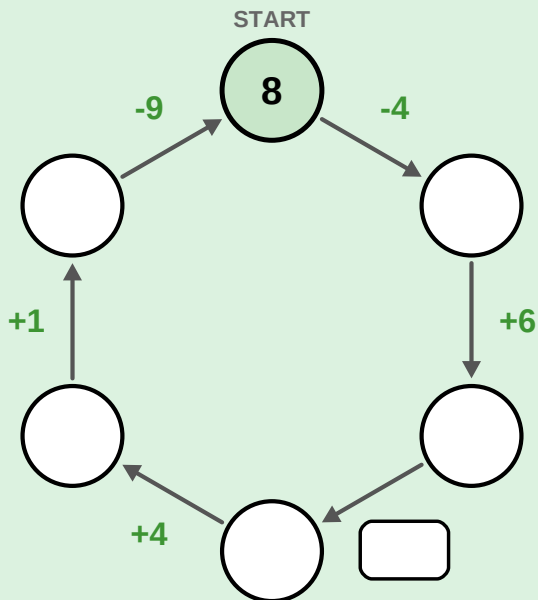
2.

Do you get back to the start?



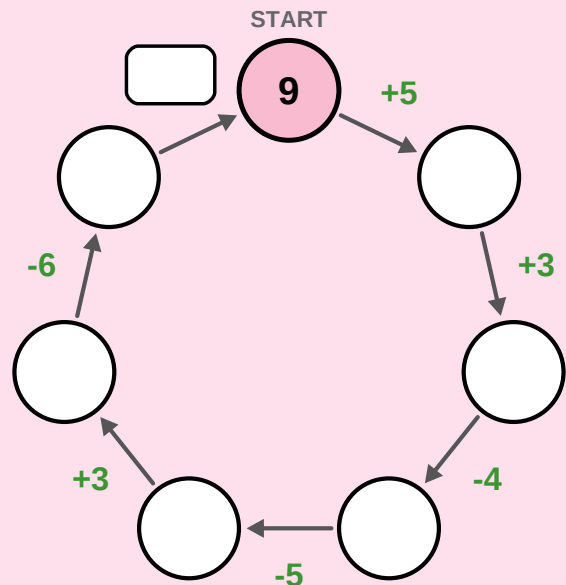
3.

Find the missing step to get back home.



4.

Find the missing step to get back home.

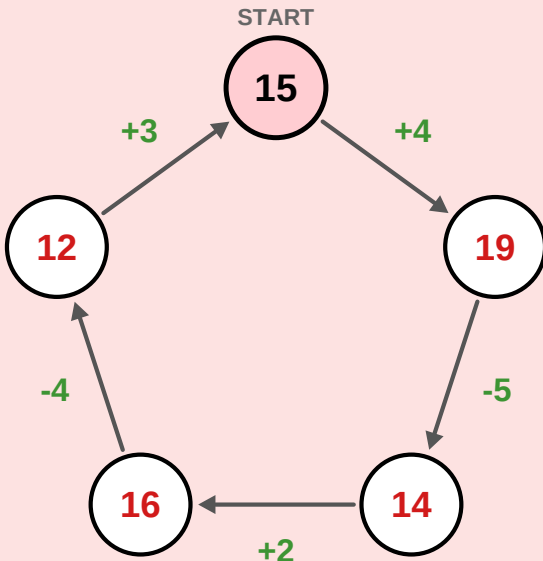


Number Loops That Come Back to the Start

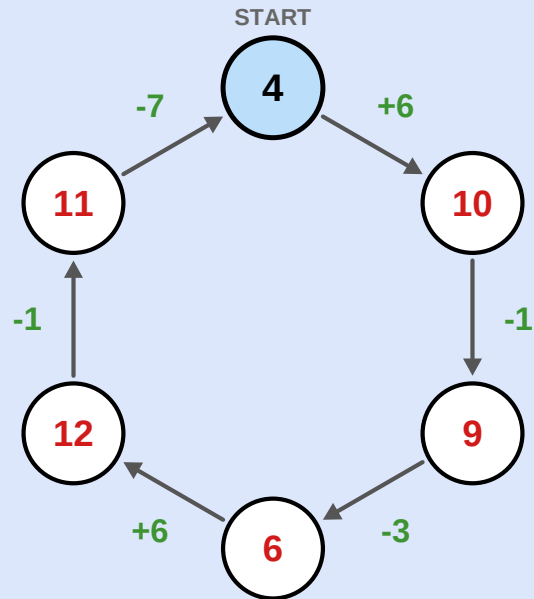
Answer Key

Start at START and go around the loop. If you do every step right, you land on the start number again.

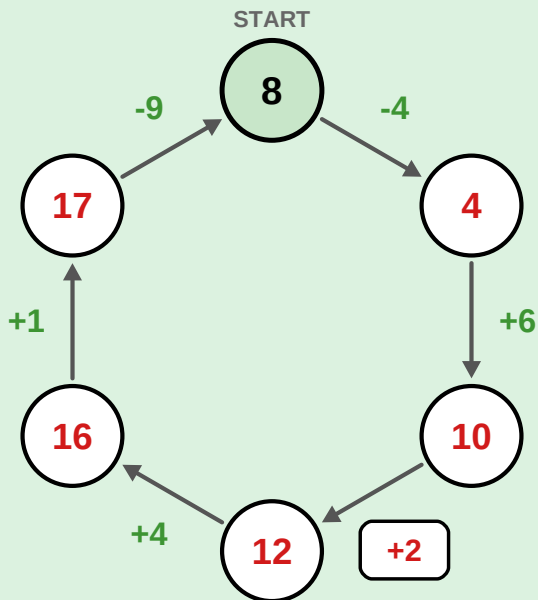
1. Do you get back to the start?



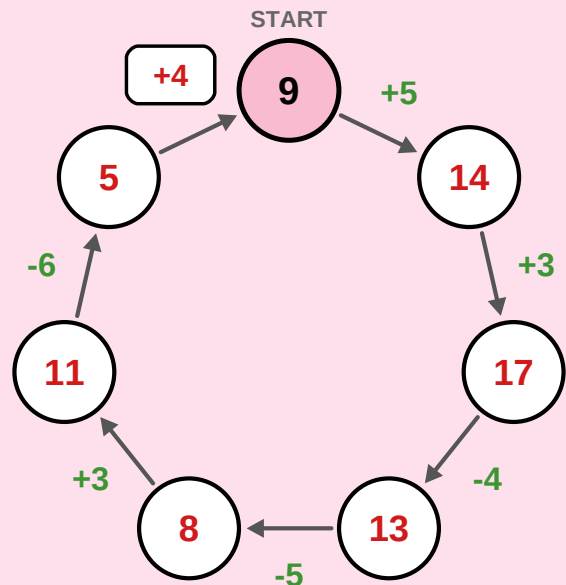
2. Do you get back to the start?



3. Find the missing step to get back home.



4. Find the missing step to get back home.

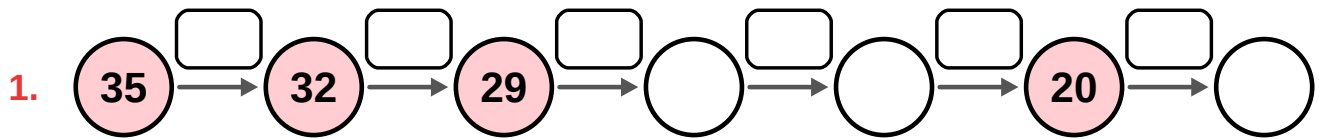
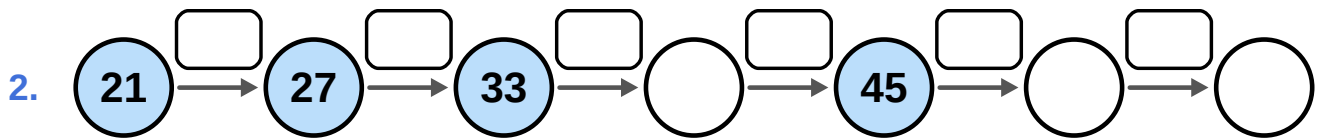
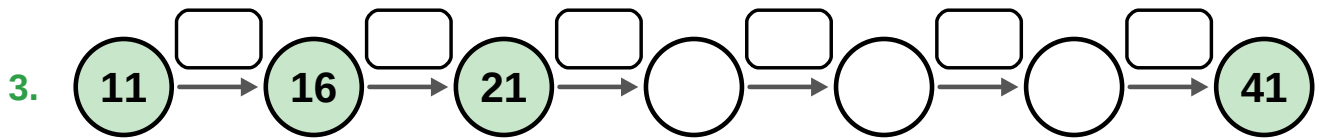
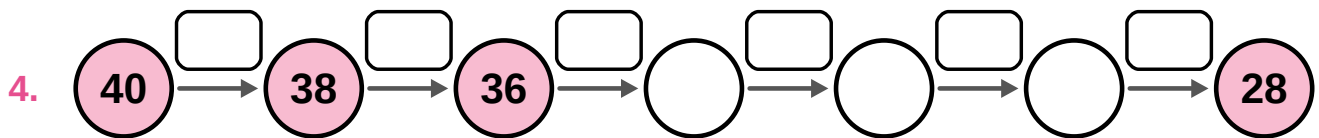
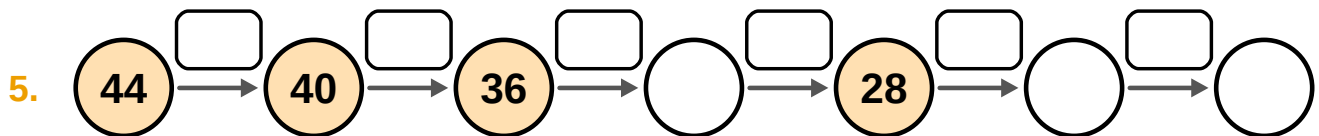
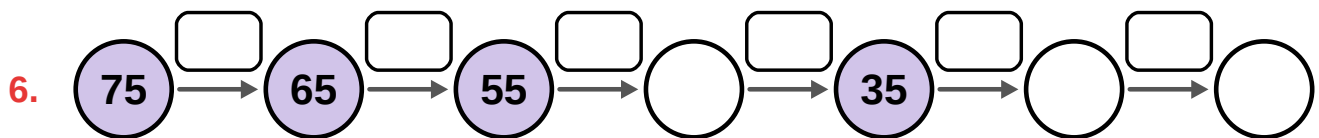
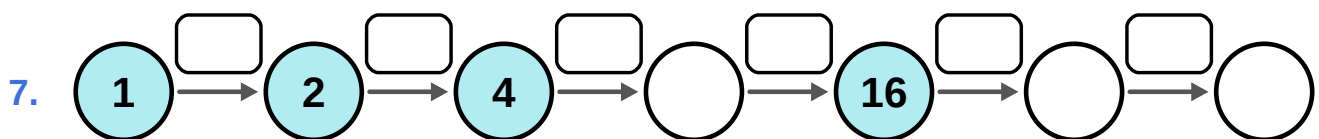


Mystery Rule Chains: Find the Rule

Name: _____

Date: _____

Each chain uses the same rule on every arrow. Find the rule, write it in the boxes and fill in the missing numbers.



Mystery Rule Chains: Find the Rule

Answer Key

Each chain uses the same rule on every arrow. Find the rule, write it in the boxes and fill in the missing numbers.

1.

35 $\xrightarrow{-3}$ 32 $\xrightarrow{-3}$ 29 $\xrightarrow{-3}$ 26 $\xrightarrow{-3}$ 23 $\xrightarrow{-3}$ 20 $\xrightarrow{-3}$ 17
2.

21 $\xrightarrow{+6}$ 27 $\xrightarrow{+6}$ 33 $\xrightarrow{+6}$ 39 $\xrightarrow{+6}$ 45 $\xrightarrow{+6}$ 51 $\xrightarrow{+6}$ 57
3.

11 $\xrightarrow{+5}$ 16 $\xrightarrow{+5}$ 21 $\xrightarrow{+5}$ 26 $\xrightarrow{+5}$ 31 $\xrightarrow{+5}$ 36 $\xrightarrow{+5}$ 41
4.

40 $\xrightarrow{-2}$ 38 $\xrightarrow{-2}$ 36 $\xrightarrow{-2}$ 34 $\xrightarrow{-2}$ 32 $\xrightarrow{-2}$ 30 $\xrightarrow{-2}$ 28
5.

44 $\xrightarrow{-4}$ 40 $\xrightarrow{-4}$ 36 $\xrightarrow{-4}$ 32 $\xrightarrow{-4}$ 28 $\xrightarrow{-4}$ 24 $\xrightarrow{-4}$ 20
6.

75 $\xrightarrow{-10}$ 65 $\xrightarrow{-10}$ 55 $\xrightarrow{-10}$ 45 $\xrightarrow{-10}$ 35 $\xrightarrow{-10}$ 25 $\xrightarrow{-10}$ 15
7.

1 $\xrightarrow{\times 2}$ 2 $\xrightarrow{\times 2}$ 4 $\xrightarrow{\times 2}$ 8 $\xrightarrow{\times 2}$ 16 $\xrightarrow{\times 2}$ 32 $\xrightarrow{\times 2}$ 64

Number Chains With Times and Divide

Name: _____

Date: _____

Follow the arrows: add, subtract, multiply and divide. Write each answer in the next circle.

1. $25 \xrightarrow{-7} \bigcirc \xrightarrow{\div 2} \bigcirc \xrightarrow{\times 3} \bigcirc \xrightarrow{-5} \bigcirc \xrightarrow{+7} \bigcirc$

2. $54 \xrightarrow{\div 2} \bigcirc \xrightarrow{-4} \bigcirc \xrightarrow{\times 3} \bigcirc \xrightarrow{-10} \bigcirc \xrightarrow{+10} \bigcirc$

3. $16 \xrightarrow{-8} \bigcirc \xrightarrow{\div 2} \bigcirc \xrightarrow{+9} \bigcirc \xrightarrow{\times 2} \bigcirc \xrightarrow{\times 2} \bigcirc$

4. $62 \xrightarrow{-10} \bigcirc \xrightarrow{\div 2} \bigcirc \xrightarrow{\times 3} \bigcirc \xrightarrow{-6} \bigcirc \xrightarrow{-10} \bigcirc$

5. $88 \xrightarrow{\div 2} \bigcirc \xrightarrow{-10} \bigcirc \xrightarrow{-8} \bigcirc \xrightarrow{-9} \bigcirc \xrightarrow{+4} \bigcirc$

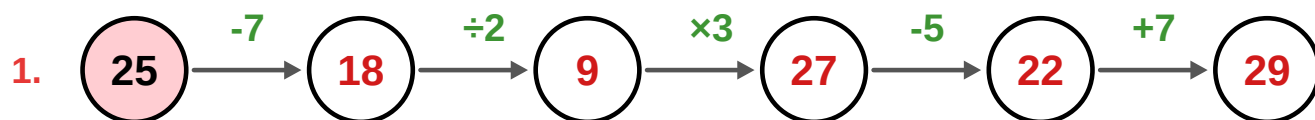
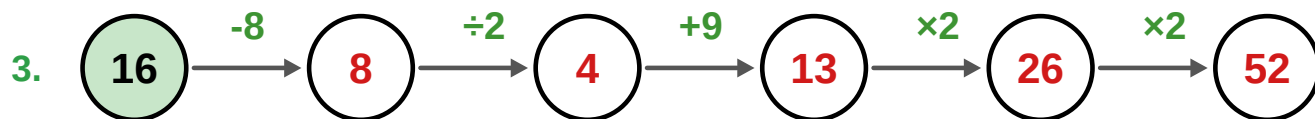
6. $31 \xrightarrow{-6} \bigcirc \xrightarrow{+6} \bigcirc \xrightarrow{-9} \bigcirc \xrightarrow{\times 3} \bigcirc \xrightarrow{-2} \bigcirc$

7. $26 \xrightarrow{\times 3} \bigcirc \xrightarrow{-10} \bigcirc \xrightarrow{-7} \bigcirc \xrightarrow{+2} \bigcirc \xrightarrow{-9} \bigcirc$

Number Chains With Times and Divide

Answer Key

Follow the arrows: add, subtract, multiply and divide. Write each answer in the next circle.



Backward Number Chains: Find the Start

Name: _____

Date: _____

Only the last number is given. Work backward with the opposite operation to fill every circle.

1. $\text{start?} \xrightarrow{\times 3} \text{ } \xrightarrow{-5} \text{ } \xrightarrow{\times 3} \text{ } \xrightarrow{+6} \text{ } \xrightarrow{+3} 48$

2. $\text{start?} \xrightarrow{+4} \text{ } \xrightarrow{\div 2} \text{ } \xrightarrow{\times 2} \text{ } \xrightarrow{\div 2} \text{ } \xrightarrow{+9} 20$

3. $\text{start?} \xrightarrow{-9} \text{ } \xrightarrow{\times 2} \text{ } \xrightarrow{\times 2} \text{ } \xrightarrow{\div 2} \text{ } \xrightarrow{\div 2} 8$

4. $\text{start?} \xrightarrow{+3} \text{ } \xrightarrow{-6} \text{ } \xrightarrow{\div 2} \text{ } \xrightarrow{+6} \text{ } \xrightarrow{+4} 31$

5. $\text{start?} \xrightarrow{\div 2} \text{ } \xrightarrow{\div 2} \text{ } \xrightarrow{-8} \text{ } \xrightarrow{\times 3} \text{ } \xrightarrow{+9} 21$

6. $\text{start?} \xrightarrow{-6} \text{ } \xrightarrow{-5} \text{ } \xrightarrow{\div 2} \text{ } \xrightarrow{+8} \text{ } \xrightarrow{\times 3} 45$

7. $\text{start?} \xrightarrow{-5} \text{ } \xrightarrow{+3} \text{ } \xrightarrow{\times 3} \text{ } \xrightarrow{-2} \text{ } \xrightarrow{+6} 58$

Backward Number Chains: Find the Start

Answer Key

Only the last number is given. Work backward with the opposite operation to fill every circle.

1. $\text{start?} \xrightarrow{\times 3} 18 \xrightarrow{-5} 13 \xrightarrow{\times 3} 39 \xrightarrow{+6} 45 \xrightarrow{+3} 48$

2. $18 \xrightarrow{+4} 22 \xrightarrow{\div 2} 11 \xrightarrow{\times 2} 22 \xrightarrow{\div 2} 11 \xrightarrow{+9} 20$

3. $17 \xrightarrow{-9} 8 \xrightarrow{\times 2} 16 \xrightarrow{\times 2} 32 \xrightarrow{\div 2} 16 \xrightarrow{\div 2} 8$

4. $45 \xrightarrow{+3} 48 \xrightarrow{-6} 42 \xrightarrow{\div 2} 21 \xrightarrow{+6} 27 \xrightarrow{+4} 31$

5. $48 \xrightarrow{\div 2} 24 \xrightarrow{\div 2} 12 \xrightarrow{-8} 4 \xrightarrow{\times 3} 12 \xrightarrow{+9} 21$

6. $25 \xrightarrow{-6} 19 \xrightarrow{-5} 14 \xrightarrow{\div 2} 7 \xrightarrow{+8} 15 \xrightarrow{\times 3} 45$

7. $20 \xrightarrow{-5} 15 \xrightarrow{+3} 18 \xrightarrow{\times 3} 54 \xrightarrow{-2} 52 \xrightarrow{+6} 58$