

Logic and the Art of Reasoning

Table Puzzle 1

There are five people sitting around a table. Their names are **Alice**, **Bob**, **Carol**, **Ted**, and **Zoe**. Your job is to figure out where they're sitting.

You are given the following three hints (**H1-H3**):

H1) Zoe is three seats to Alice's left.

H2) Ted is three seats to Zoe's left.

H3) Ted is two seats to Carol's left.

Can you find an arrangement of people that satisfies these conditions?

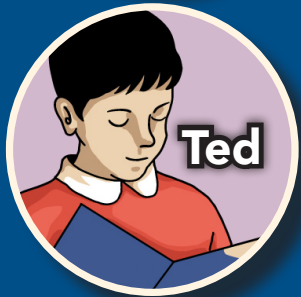
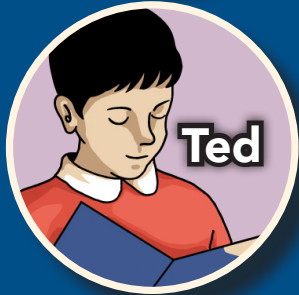
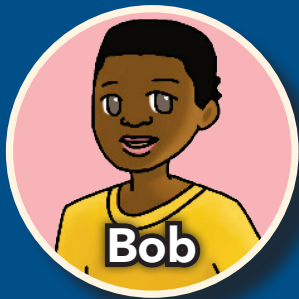
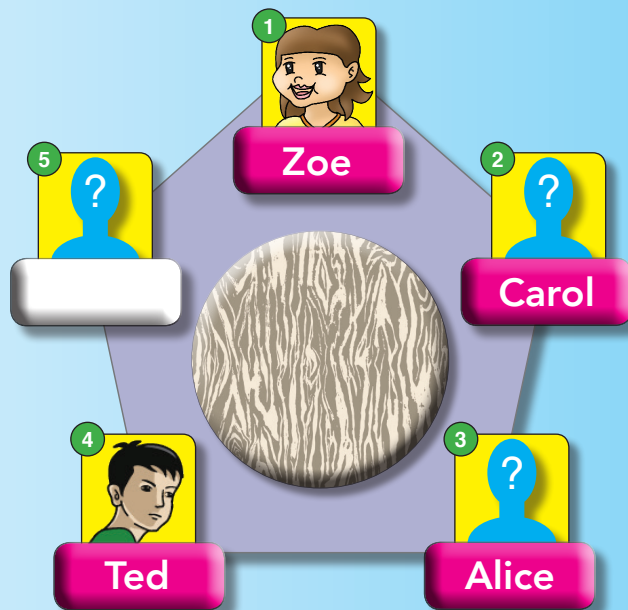


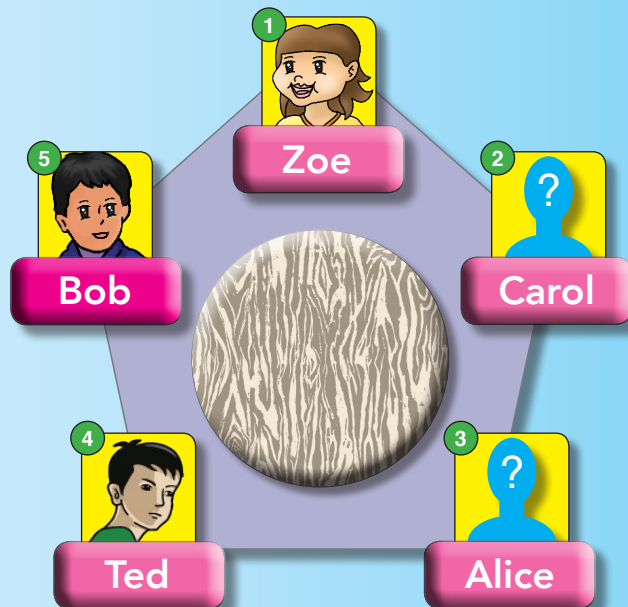
Table Puzzle 1



Let's put **Zoe** at position ①. **H1** (*Zoe is three seats to Alice's left*) would put **Alice** at position ③. **H2** (*Ted is three seats to Zoe's left*) would put **Ted** at position ④. **H3** (*Ted is two seats Carol's left*) would put **Carol** at position ②.



Since only one seat remains, **Bob** would be placed at position ⑤.



Logic and the Art of Reasoning

Table Puzzle 2

There are five people sitting around a table. Their names are **Alice**, **Bob**, **Carol**, **Ted**, and **Zoe**. Your job is to figure out where they're sitting.

You are given the following three hints (**H1-H3**):

H1) Alice is four seats to Bob's left.

H2) Carol is four seats to Alice's left.

H3) Ted is four seats to Carol's left.

Can you find an arrangement of people that satisfies these conditions?

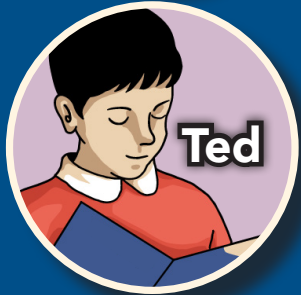
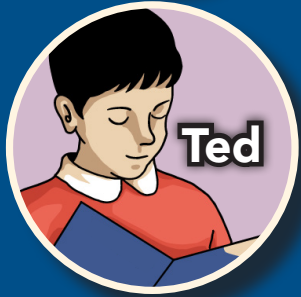
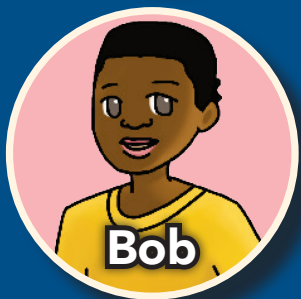
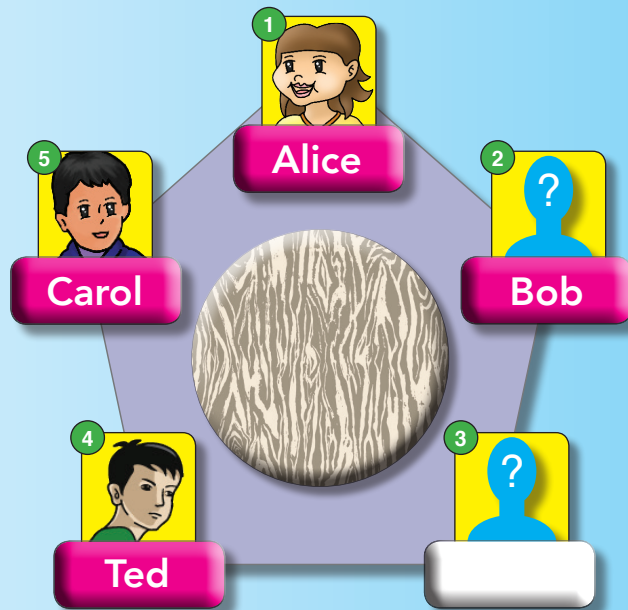


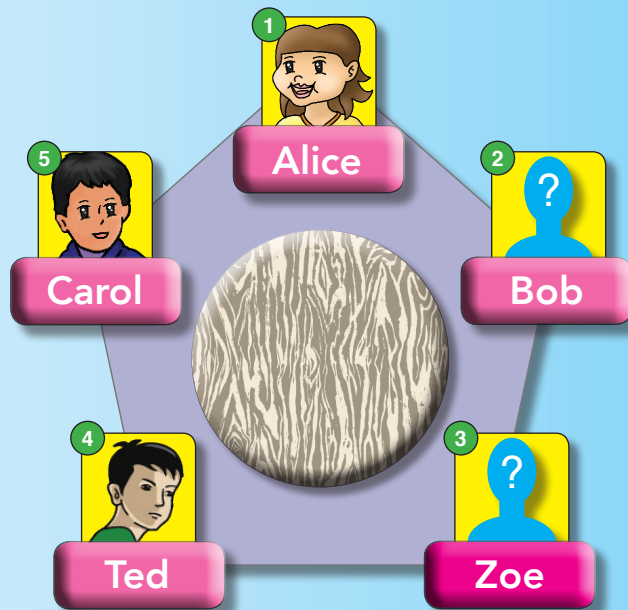
Table Puzzle 2



Let's put **Alice** at position 1. **H1** (*Alice is four seats to Bob's left*) would put **Bob** at position 2. **H2** (*Carol is four seats to Alice's left*) would put **Carol** at position 5. **H3** (*Ted is four seats to Carol's left*) would put **Ted** at position 4.



Since only one seat remains, **Zoe** would be placed at position 3.



Logic and the Art of Reasoning

Code Breakers 1

Below are groups of images followed by their translation to English. Your job is to determine what each image means. Each image corresponds to a single word. Note that the order of the images may not be the same as the order of the English words.

1

Code Sequence



English Translation

Alice saw Carol

2

Code Sequence



English Translation

Alice heard Carol

3

Code Sequence



English Translation

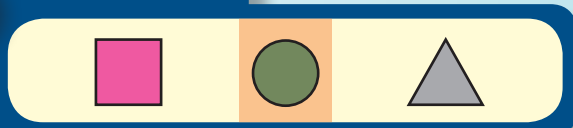
Bob heard Carol

How would you decode , , , , and  ?


Code Breakers 1

Sentences ① and ② have "Alice" and "Carol" in common, so ● must decode to "saw" and ★ must decode to "heard".


① **Code Sequence**



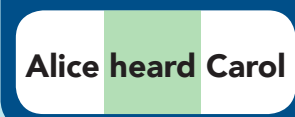
English Translation



② **Code Sequence**




English Translation




"Alice" is present in sentence ② while "Bob" is present in sentence ③, so ■ decodes to "Alice" and ♥ decodes to "Bob". Therefore, ▲ must decode to "Carol".


② **Code Sequence**




English Translation



③ **Code Sequence**



English Translation



■ = Alice ● = saw ▲ = Carol ★ = heard ♥ = Bob

Logic and the Art of Reasoning

Marble Game 1

Suppose you see six bags numbered 1-6. One bag has only red marbles, one bag has only blue marbles, one bag has only green marbles, one bag has both red and blue marbles, one bag has both green and red marbles, and one bag has both blue and green marbles.

Below are nine hints (H1-H9) for you to use and find out which bag contains which colored marbles. Assume that you've pulled:

H1) ...a **blue** marble from bag ⑥

H2) ...a **red** marble from bag ④

H3) ...a **green** marble from bag ⑤

H4) ...a **blue** marble from bag ③

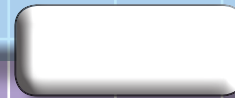
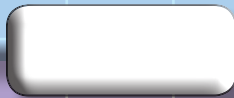
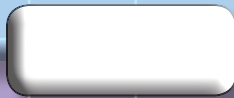
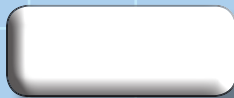
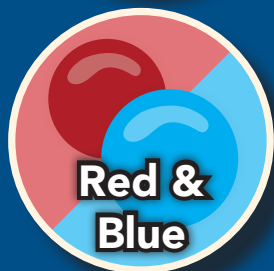
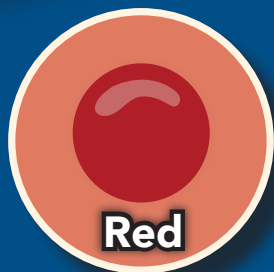
H5) ...a **red** marble from bag ④

H6) ...a **green** marble from bag ②

H7) ...a **green** marble from bag ⑥

H8) ...a **red** marble from bag ⑤

H9) ...a **red** marble from bag ③



Marble Game 1

From H1 and H7, you know that bag ⑥ contains blue and green marbles.
From H4 and H9, you know that bag ③ contains red and blue marbles.
From H3 and H8, you know that bag ⑤ contains green and red marbles.

Therefore, every other bag contains marbles of only one color.

Bag ④ contains only red marbles.
Bag ② contains only green marbles.
Bag ① contains only blue marbles.



Red



Blue



Green



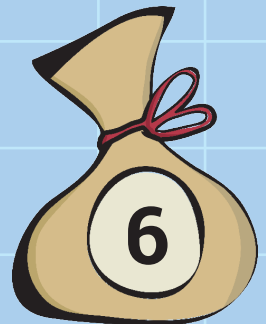
Red & Blue



Green & Red



Blue & Green



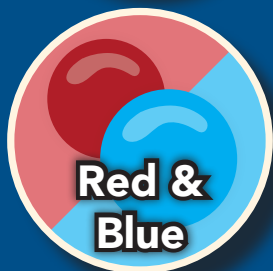
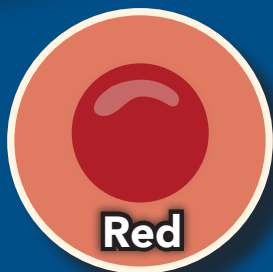
Logic and the Art of Reasoning







Marble Game 2

Again, you see six bags numbered 1-6. As before, three bags contain only one color of marble, and the other three bags contain two colors of marbles.

Below are eight hints (H1-H8) for you to use and find out which bag contains which colored marbles. Assume that you've pulled:

- H1) ...a **blue** marble from bag ④
- H2) ...a **red** marble from bag ⑤
- H3) ...a **blue** marble from bag ⑤
- H4) ...a **green** marble from bag ②
- H5) ...a **red** marble from bag ⑥
- H6) ...a **blue** marble from bag ①
- H7) ...a **green** marble from bag ⑥
- H8) ...a **green** marble from bag ①



 1	 2	 3
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 4	 5	 6
<input type="text"/>	<input type="text"/>	<input type="text"/>

Marble Game 2

From **H2** and **H3**, you know that bag ⑤ contains **red** and **blue** marbles.
From **H5** and **H7**, you know that bag ⑥ contains **green** and **red** marbles.
From **H6** and **H8**, you know that bag ① contains **blue** and **green** marbles.

Therefore, every other bag contains marbles of only one color.

Bag ② contains only **green** marbles (**H4** reinforces this).

Bag ④ contains only **blue** marbles.

Bag ③ contains only **red** marbles.



Red



Blue



Green



Red &
Blue



Green &
Red



Blue &
Green



Blue & Green



Green



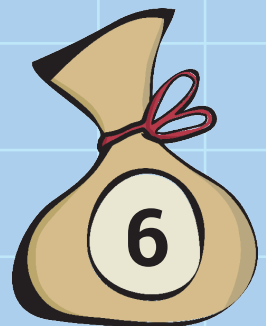
Red



Blue



Red & Blue



Green & Red

Logic and the Art of Reasoning

Table Puzzle 3

There are five people sitting around a table. Their names are **Alice**, **Bob**, **Carol**, **Ted**, and **Zoe**. Your job is to figure out where they're sitting.

You are given the following five hints (**H1-H5**)—however, **one of the hints is false**:

- H1) Carol is three seats to Alice's left.
- H2) Bob is two seats to Zoe's left.
- H3) Bob is three seats to Alice's left.
- H4) Ted is three seats to Carol's left.
- H5) Alice is three seats to Ted's left.

After identifying the incorrect hint, can you find an arrangement of people that satisfies the conditions above?

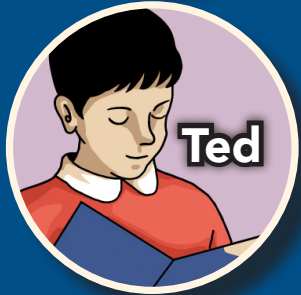
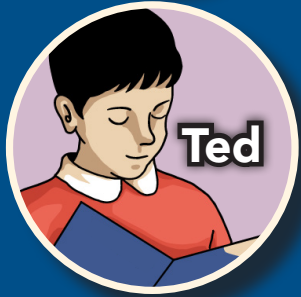
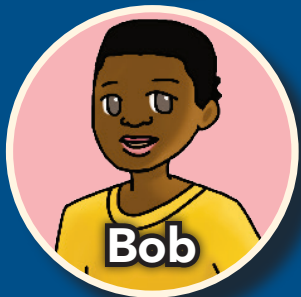
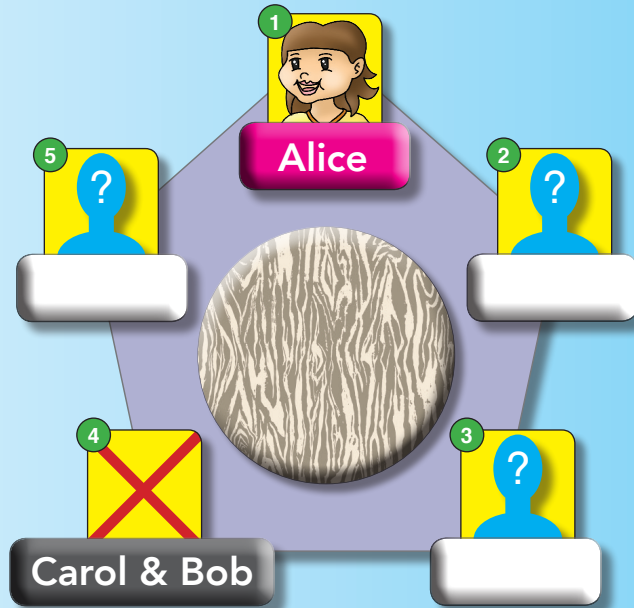


Table Puzzle 3



Let's put **Alice** at position ①.

H1 (*Carol is three seats to Alice's left*) contradicts **H3** (*Bob is three seats to Alice's left*), as applying both hints would place **Carol** and **Bob** at position ④. Therefore, one of these hints must be false. To identify the false hint, you'll need to apply the remaining hints to see if they support or contradict **H1** or **H3**.



If **H1** is assumed to be true (and **H3** false), you'll find that applying **H4** (*Ted is three seats to Carol's left*) and **H5** (*Alice is three seats to Ted's left*) places **Carol** at positions ④ and ⑤, which is impossible. Therefore, **H1** is incorrect and may be discarded, while **H3** may be applied as true.

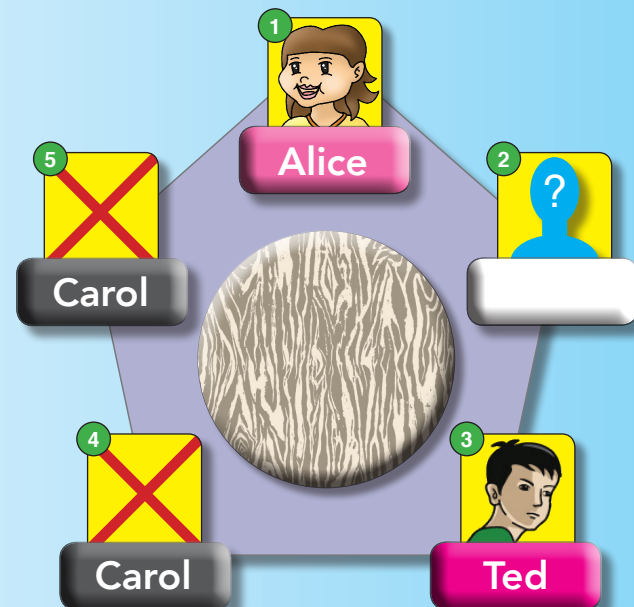
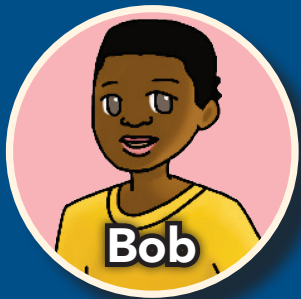


Table Puzzle 3



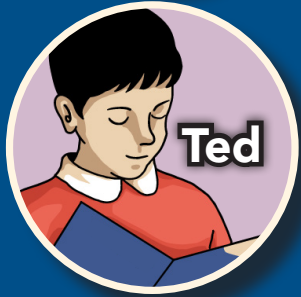
Alice



Bob



Carol

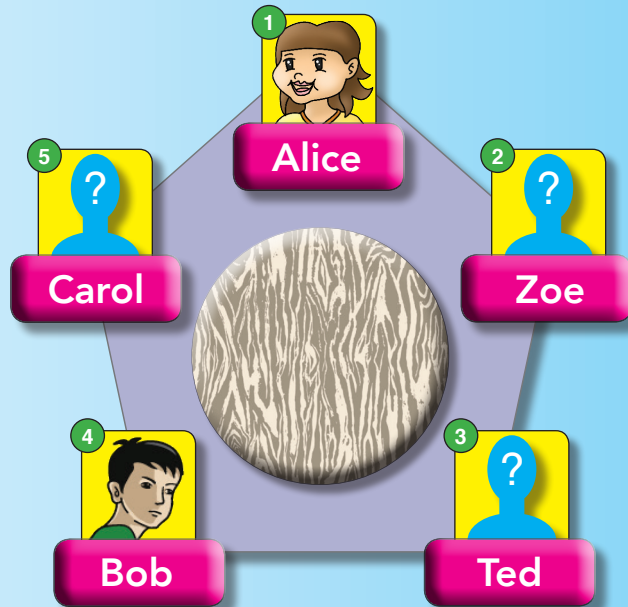


Ted



Zoe

Now that you've identified the false hint (**H1**), proceed with the remaining correct hints (**H1-H5**). Again, place **Alice** at position **1**. **H3** (*Bob is three seats to Alice's left*) places **Bob** at position **4**, and **H2** (*Bob is two seats to Zoe's left*) places **Zoe** at position **2**. **H5** (*Alice is three seats to Ted's left*) places **Ted** at position **3**, while **H4** (*Ted is three seats to Carol's left*) places **Carol** at position **5**.



Logic and the Art of Reasoning

Table Puzzle 4

There are six people sitting around a table. Their names are **Alice**, **Bob**, **Carol**, **Sybil**, **Ted**, and **Zoe**. Your job is to figure out where they're sitting.

You are given the following three hints (**H1-H3**):

H1) Sybil is two seats to Bob's left.

H2) Ted is three seats to Bob's left.

H3) Alice is five seats to Zoe's left.

Can you find an arrangement of people that satisfies these conditions?

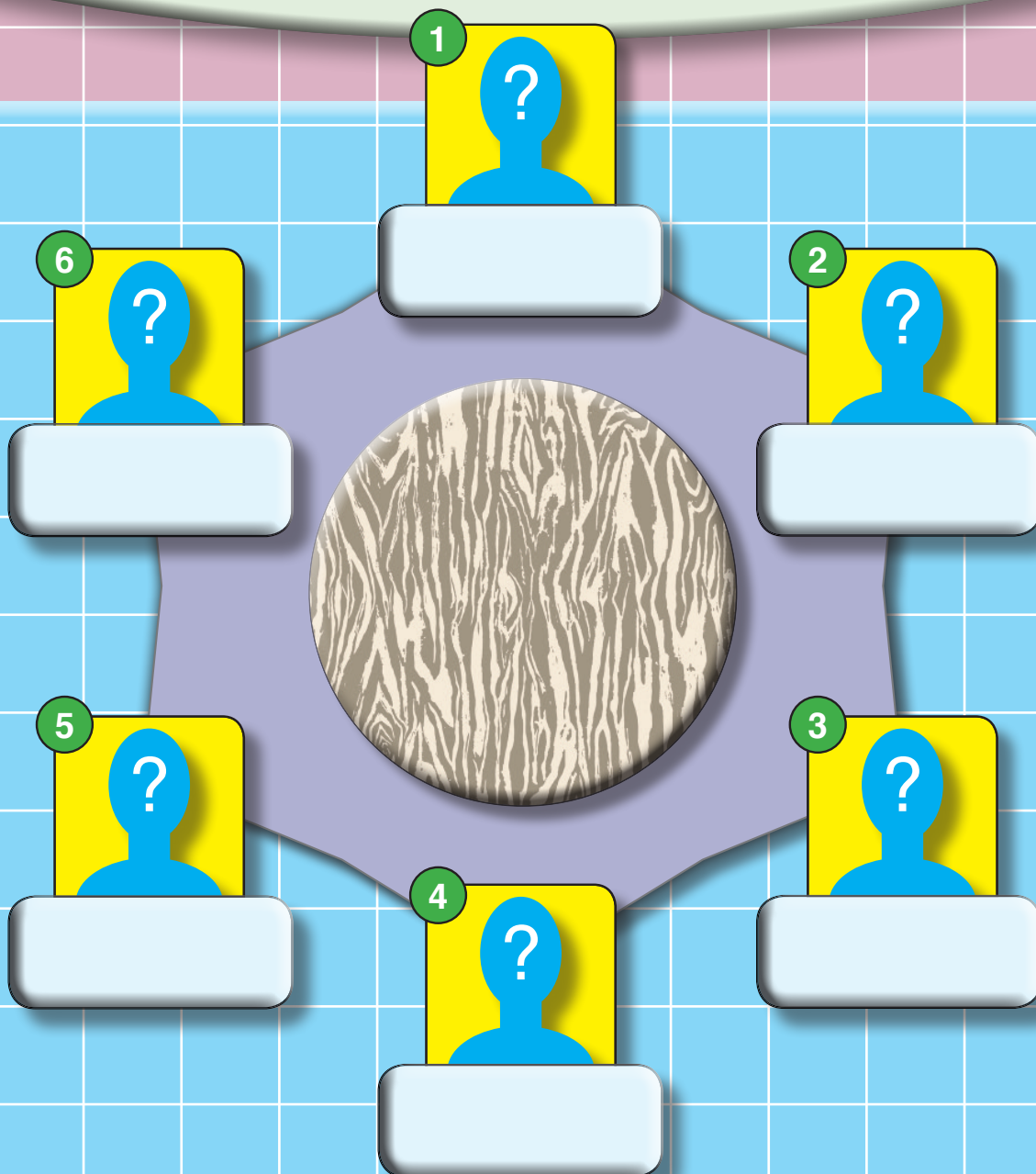
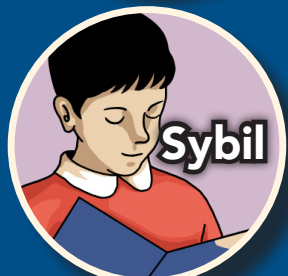
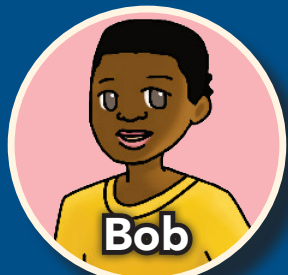
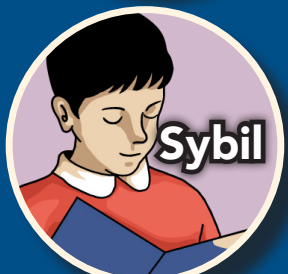
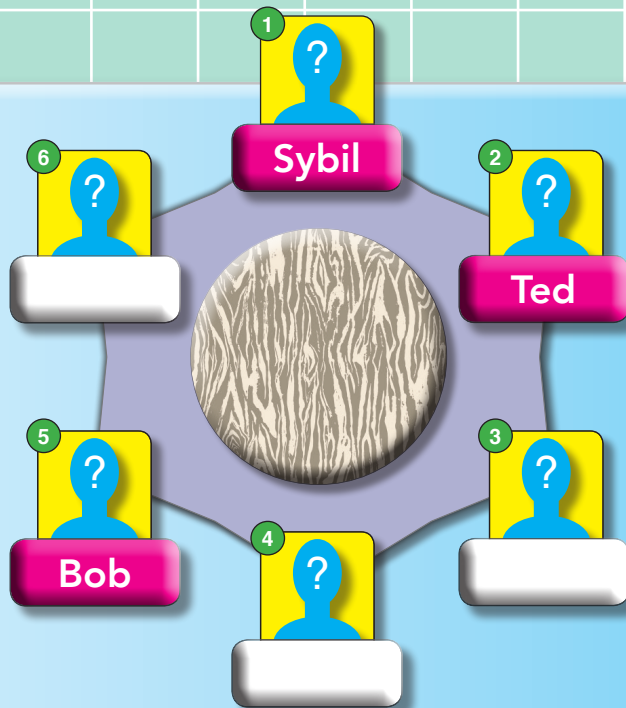


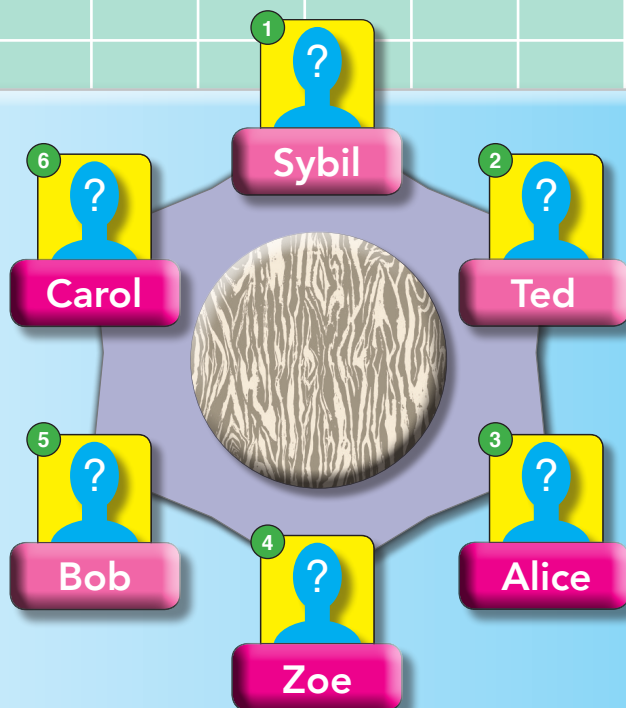
Table Puzzle 4



Let's put **Sybil** at position ①. **H1** (*Sybil is two seats to Bob's left*) places **Bob** at position ⑤. **H2** (*Ted is three seats to Bob's left*) places **Ted** at position ②.



The only hint left is **H3** (*Alice is five seats to Zoe's left*). Because **Alice** is five seats to **Zoe's** left, **Alice** and **Zoe** must be sitting next to one another. Of the available seats, **Alice** must be at position ③ and **Zoe** must be at position ④. Since only one seat remains, **Carol** would be placed at position ⑥.



Logic and the Art of Reasoning

Table Puzzle 5

There are six people sitting around a table. Their names are **Alice**, **Bob**, **Carol**, **Ted**, and **Zoe**. Your job is to figure out where they're sitting.

You are given the following five hints (**H1-H5**)—however, **one of the hints may or may not be false**:

- H1) Alice is two seats to Zoe's left.
- H2) Ted is five seats to Alice's left.
- H3) Sybil is three seats to Alice's left.
- H4) Bob is four seats to Sybil's left.
- H5) Zoe is four seats to Alice's left.

After identifying the incorrect hint (if there is one!), can you find an arrangement of people that satisfies the conditions above?

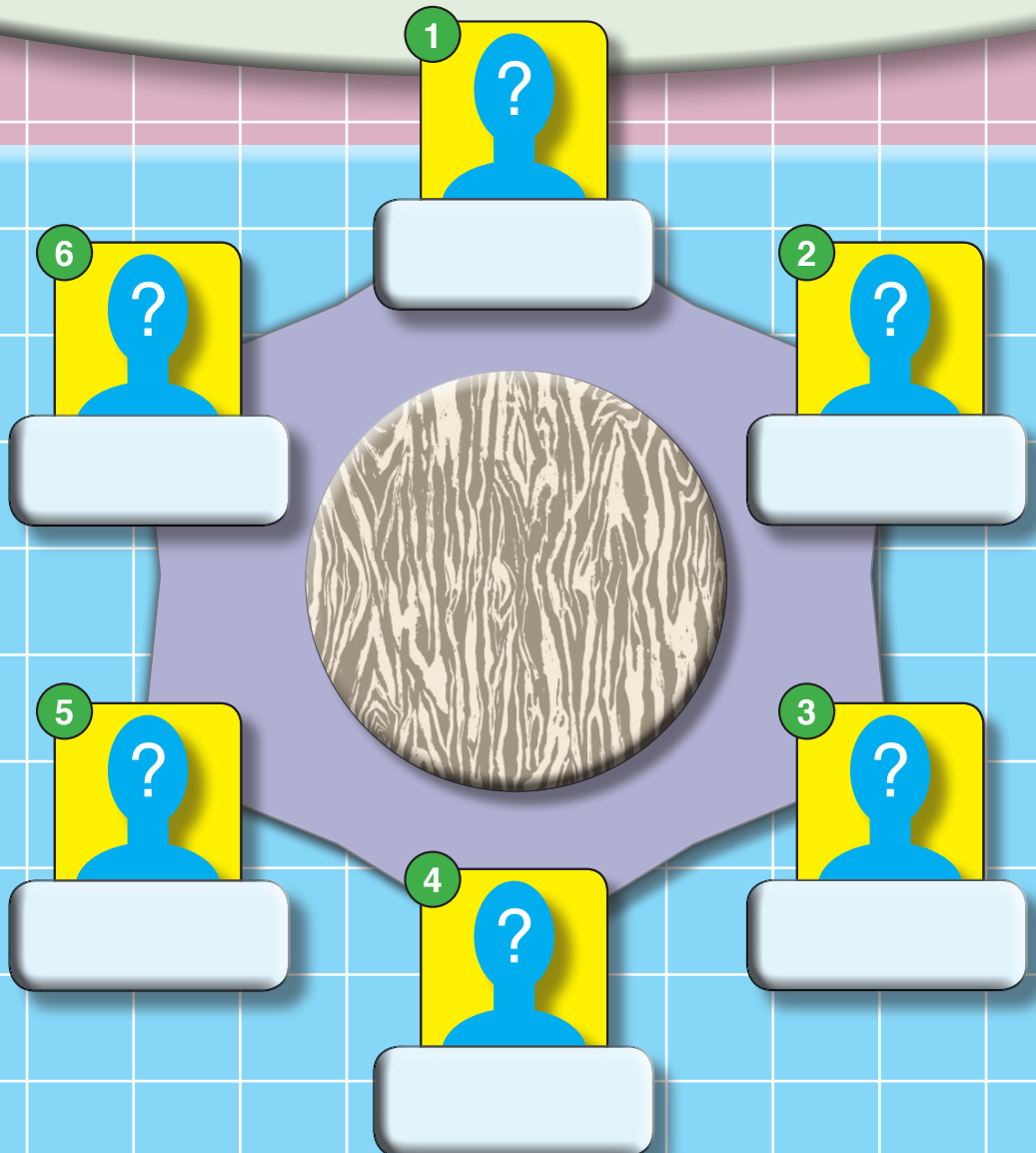
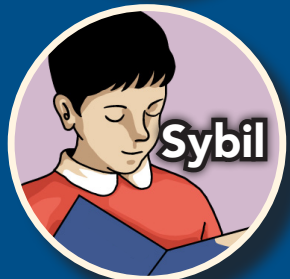
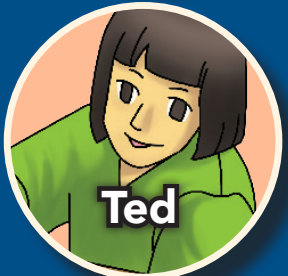
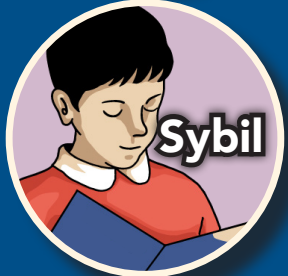
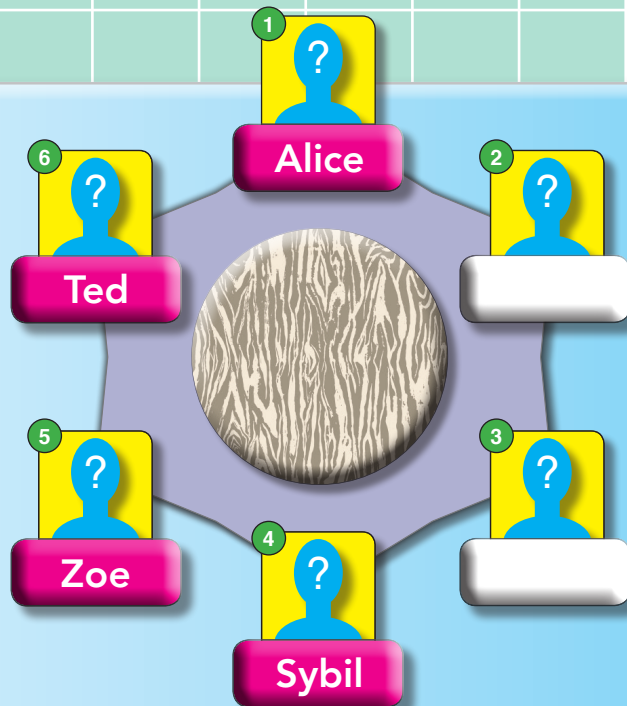


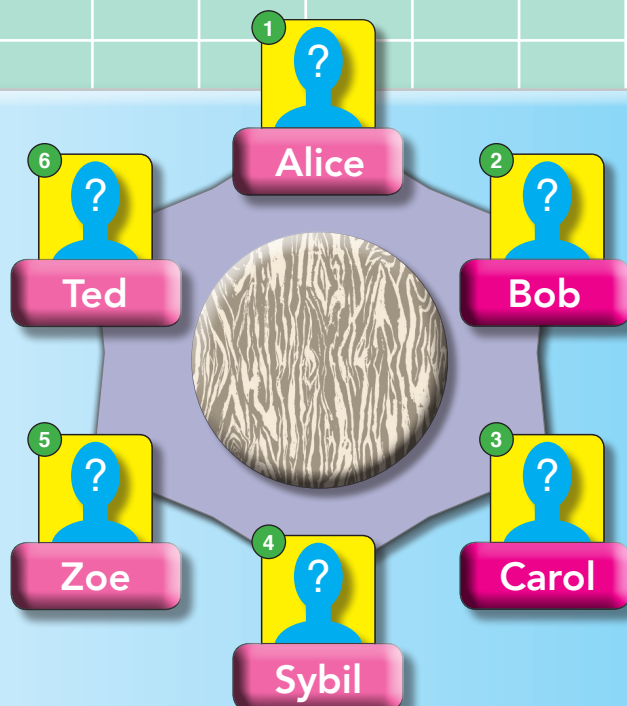
Table Puzzle 5



Since all but one of the hints (**H4**) reference **Alice**, let's put **Alice** at position **1**. **H1** (*Alice is two seats to Zoe's left*) places **Zoe** at position **5**. **H2** (*Ted is five seats to Alice's left*) places **Ted** at position **6**. **H3** (*Sybil is three seats to Alice's left*) places **Sybil** at position **4**. **H5** (*Zoe is four seats to Alice's left*) reconfirms what **H1** has already shown: that **Zoe** is at position **5**.



So far, all of the hints appear to be accurate. The only hint that doesn't mention **Alice**, **H4** (*Bob is four seats to Sybil's left*), places **Bob** at position **2**. Since only one seat remains, **Carol** would be placed at position **3**. Since all hints are accounted for and everyone is in their own seat, you can also conclude that all of the hints provided are true.



Logic and the Art of Reasoning

Marble Game 3

Again, you see six bags numbered 1-6. Some bags contain only one color of marble, and the other bags contain two colors of marbles. Below are twelve hints (H1-H12) for you to use and find out which bag contains which colored marbles. Assume that you've pulled:

H1) ...a **blue** marble from bag ④

H2) ...a **red** marble from bag ⑥

H3) ...a **red** marble from bag ①

H4) ...a **green** marble from bag ①

H5) ...a **blue** marble from bag ⑤

H6) ...a **blue** marble from bag ④

H7) ...a **blue** marble from bag ②

H8) ...a **green** marble from bag ②

H9) ...a **green** marble from bag ②

H10) ...a **blue** marble from bag ④

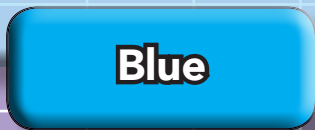
H11) ...a **red** marble from bag ⑤

H12) ...a **red** marble from bag ⑥



Marble Game 3

From **H3** and **H4**, you know that bag ① contains **green** and **red** marbles.
From **H7** and **H8**, you know that bag ② contains **blue** and **green** marbles.
From **H5** and **H11**, you know that bag ⑤ contains **red** and **blue** marbles.
By **H6**, you know that bag ④ contains only **blue** marbles.
By **H12**, you know that bag ⑥ contains only **red** marbles.
By **H12**, you should also know that bag ③ contains only **green** marbles.

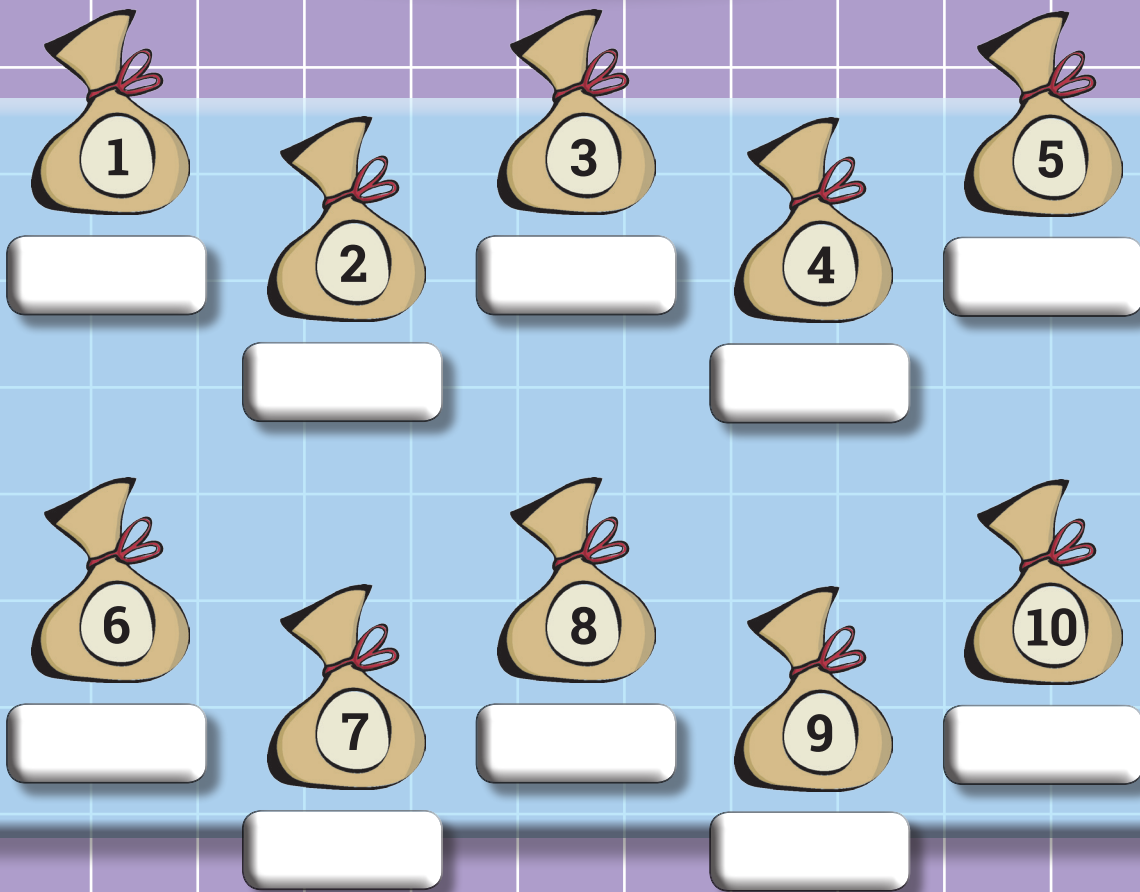
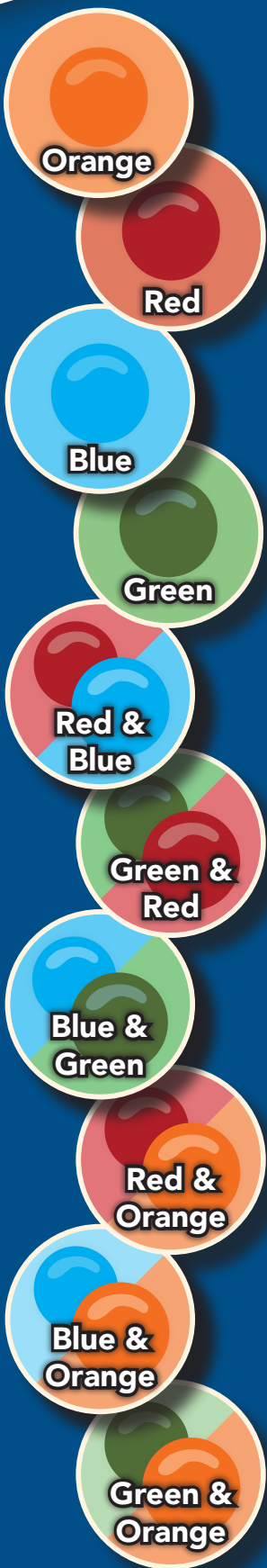


Logic and the Art of Reasoning

Marble Game 4

You see ten bags numbered 1-10. Some bags contain only one color of marble, and the other bags contain two colors of marbles. Below are fifteen hints (H1-H17) for you to use and find out which bag contains which colored marbles. Assume that you've pulled:

- H1) ...a **blue** marble from bag ④
- H2) ...a **red** marble from bag ⑥
- H3) ...a **red** marble from bag ①
- H4) ...an **orange** marble from bag ①
- H5) ...a **green** marble from bag ⑤
- H6) ...an **orange** marble from bag ④
- H7) ...a **red** marble from bag ⑥
- H8) ...a **blue** marble from bag ⑦
- H9) ...a **blue** marble from bag ②
- H10) ...a **red** marble from bag ②
- H11) ...a **blue** marble from bag ④
- H12) ...an **orange** marble from bag ⑤
- H13) ...an **green** marble from bag ⑨
- H14) ...a **blue** marble from bag ⑧
- H15) ...an **green** marble from bag ⑧
- H16) ...a **green** marble from bag ③
- H17) ...a **red** marble from bag ③



Logic and the Art of Reasoning

Marble Game 4



 1 	 2 	 3 
 4 	 5 	 6 
 7 	 8 	 9 
	 10 	

Logic and the Art of Reasoning

Code Breakers 2

Below are groups of images followed by their translation to English. Your job is to determine what each image means. Each image corresponds to a single word. Note that the order of the images may not be the same as the order of the English words.

1

Code Sequence

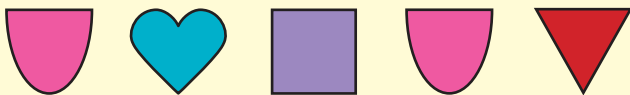


English Translation

big Alice saw small Bob

2

Code Sequence



English Translation

big Carol heard big Bob

3

Code Sequence



English Translation

small Carol saw small Bob

How would you decode , , , , , , and ?

Code Breakers 2

"Alice" appears only in sentence ①, so ★ must decode to "Alice". "heard" appears only in sentence ②, so ■ must decode to "heard" and ○ must decode to "saw". "big" appears twice in sentence ②, so ◐ must decode to "big".

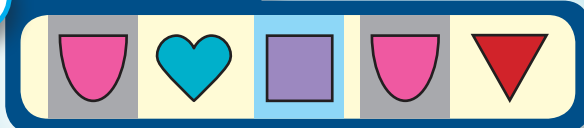
① **Code Sequence**




English Translation



② **Code Sequence**

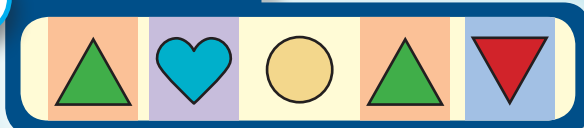


English Translation




"small" appears twice in sentence ③, so ▲ must decode to "small". "Bob" appears in all three sentences, so ♥ decodes to "Bob". Lastly, "Carol" appears in sentences ② and ③, so ▼ must decode to "Carol".

③ **Code Sequence**



English Translation



▲ = small

♥ = Bob

○ = saw

◐ = big

★ = Alice

▼ = Carol

■ = heard

Logic and the Art of Reasoning

Code Breakers 3

Below are groups of images followed by their translation to English. Your job is to determine what each image means. Each image corresponds to a single word. Note that the order of the images may not be the same as the order of the English words.

1

Code Sequence



English Translation

Carol heard Bob

2

Code Sequence



English Translation

Carol heard Alice

3

Code Sequence











English Translation




Bob heard Alice




How would you decode , ,  and  ?


Code Breakers 3


By comparing sentences ① and ②, you'll see that "Bob" is only in sentence ① while "Alice" is only in sentence ②. Therefore,  must decode to "Bob" and  must decode to "Alice".


①	Code Sequence   	English Translation Carol heard Bob
②	Code Sequence   	English Translation Carol heard Alice


At this point,  could decode as either "heard" or "Carol". However, since sentence ③ doesn't include "Carol",  must decode to "heard". Therefore,  must decode to "Carol".

③	Code Sequence   	English Translation Bob heard Alice
---	---	---

 = Alice

 = Carol

 = heard

 = Bob

Surprise Party 1

Which camper found out about the party first? Let's start by charting the meetings:

		TIME							
		12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM
CAMPERS	Alice								
	Bob								
	Carol								
	Liz								
	Michael								
	Sybil								
	Ted								
	Zoe								

You'll remember that only **Carol**, **Liz**, **Michael**, **Ted**, and **Zoe** showed up at 9 PM, so only those campers could've known about the party.

If **Carol** was the first to know about the party, **Zoe** and **Ted** wouldn't have heard about it. Similarly, if **Michael** was the first to know, then **Liz** wouldn't have found out.

That leaves **Liz** and **Zoe**—both are possible, because neither of them encounters anyone else earlier than 3 PM. **Michael** learns through **Zoe** at 4 PM, **Carol** learns through **Liz** at 5 PM, and **Ted** learns through **Michael** at 7 PM.

Therefore, you can safely guess that either **Liz** or **Zoe** were the first to find out about the 9 PM party.

Logic and the Art of Reasoning

Surprise Party 2

Alice, Bob, Liz, Michael, Sybil, Ted, and Zoe are all on a camping trip. One morning, someone is told about a surprise party that will start at 9 PM. That night, the following campers show up at the surprise party: **Bob, Carol, Michael, and Ted**.

Below are the meetings that occurred over the course of the day:

- Michael meets Sybil at 12:00 PM.
- Alice meets Liz at 1:00 PM.
- Carol meets Bob at 2:00 PM.
- Liz meets Carol at 3:00 PM.
- Sybil meets Alice at 4:00 PM.
- Zoe meets Ted at 5:00 PM.
- Ted meets Zoe at 6:00 PM.
- Bob meets Michael at 7:00 PM.

Puzzle Modifier: *The camper who found out about the party first is a boy.*

Which camper found out about the party first? Remember, campers don't have cellphones or computers, so news can spread only through face-to-face meetings. When two campers meet, they will always tell the other about the party (if one of them already knows about it!). Use the chart below to keep track of camper meetings.

		TIME							
		12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM
CAMPERS	Alice								
	Bob								
	Carol								
	Liz								
	Michael								
	Sybil								
	Ted								
	Zoe								

Surprise Party 2

Which boy found out about the party first? Let's start by charting the meetings:

		TIME							
		12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM
CAMPERS	Alice								
	Bob								
	Carol								
	Liz								
	Michael								
	Sybil								
	Ted								
	Zoe								

You'll remember that only **Bob**, **Carol**, **Liz**, and **Michael** showed up at 9 PM, so only those campers could've known about the party. But since you're looking for the first *boy* who heard about the party, only **Bob** and **Michael** are possibilities.

If **Michael** knew before 12 PM, then **Sybil** would know as well. Therefore, the first boy to be told must be **Bob**. **Bob** then tells **Carol** at 2 PM, **Carol** tells **Liz** at 3 PM, and **Bob** tells **Michael** at 7 PM.

Therefore, you can safely guess that **Bob** was the first boy to find out about the 9 PM party.

Surprise Party 3

Which camper found out about the party first? Let's start by charting the meetings:

		TIME							
		12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM
CAMPERS	Alice								
	Bob								
	Carol								
	Liz								
	Michael								
	Sybil								
	Ted								
	Zoe								

You'll remember that only **Bob**, **Carol**, **Michael**, and **Ted** showed up at 9 PM, so only those campers could've known about the party. Since **Bob** won't tell others about the party, he couldn't have been the first to have found out (no one would've shown up to the party, since he wouldn't have told anyone about it!).

If **Carol** was told about the party in the morning, then neither **Michael** nor **Bob** would have any way of knowing. If **Ted** were the first person to be told, then **Bob** wouldn't have a way to find out about the party.

Logic and the Art of Reasoning

Gold Thieves 1

Alice, Bob, Carol, Sybil, Ted, and Zoe are suspects of a crime: two gold pieces have been stolen. The group is made up of thieves and non-thieves. There can be, at most, two thieves. Thieves may sometimes tell the truth, and sometimes lie. Non-thieves will always tell the truth. **Your job is to identify the thief/thieves!**

Following are the suspects' testimonies:

Alice says that **Carol** is **honest**.

Zoe says that **Carol** is **honest**.

Ted accuses **Bob** of being a **thief**.

Bob says that **Zoe** is **honest**.

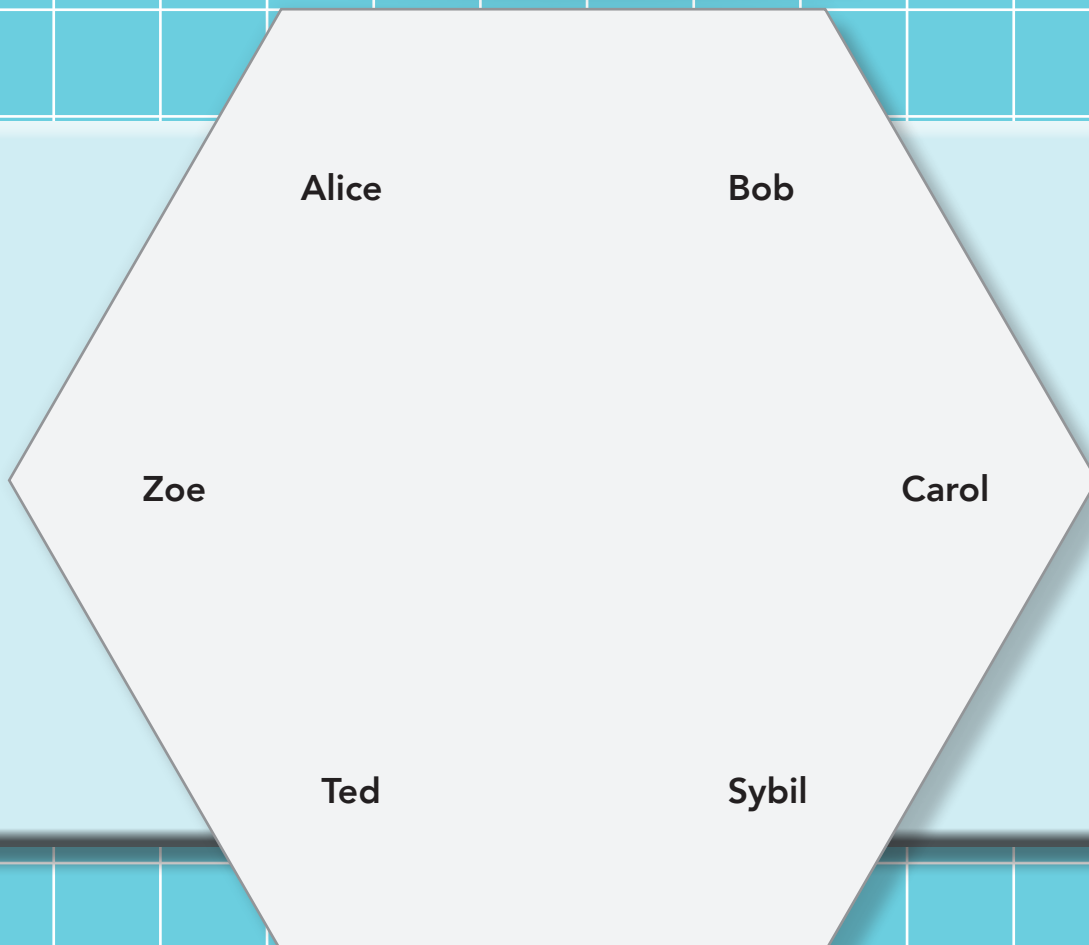
Carol accuses **Bob** of being a **thief**.

Carol accuses **Ted** of being a **thief**.

Bob says that **Carol** is **honest**.

Alice says that **Zoe** is **honest**.

Use the graph below to chart the testimonies. Visualizing the data can help you to determine who may be the thief/thieves! Draw arrows between the names to see what type of claim a suspect has made about another suspect. It's encouraged that you use different types of lines (e.g., dotted, colored) to distinguish between claims of honesty and thievery.

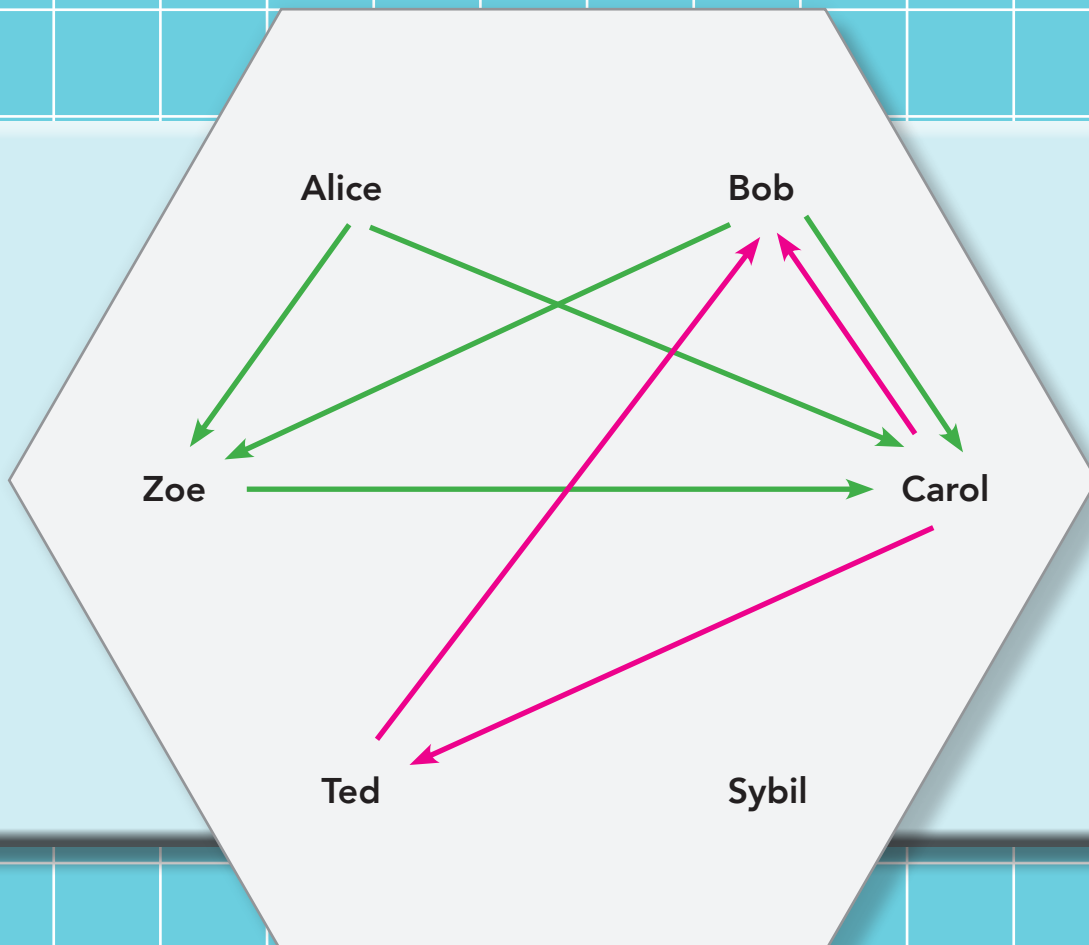


Gold Thieves 1

Whenever there is an accusation, then at least one of the accusers or accused is a thief. Since **Ted** accuses **Bob**, **Carol** accuses **Bob**, and **Carol** accuses **Ted**, you know that one or two of these accusers/accused (**Ted**, **Bob**, **Carol**) must've stolen the gold.

Everyone else must be honest. Since **Zoe** says that **Carol** is honest, **Carol** must in fact be honest. Because **Carol** accuses **Bob** of being a thief, **Bob** must therefore be a thief. Because **Carol** accuses **Ted** of being a thief, **Ted** is also a thief.

Therefore, **Bob** and **Ted** must be the thieves.



Logic and the Art of Reasoning

Gold Thieves 2

Alice, Bob, Carol, Sybil, Ted, and Zoe are suspects of a crime: two gold pieces have been stolen. The group is made up of thieves and non-thieves. There can be, at most, two thieves. Thieves may sometimes tell the truth, and sometimes lie. Non-thieves will always tell the truth. **Your job is to identify the thief/thieves!**

Following are the suspects' testimonies:

Bob says that Zoe is honest.

Carol accuses Sybil of being a thief.

Bob says that Sybil is honest.

Bob says that Ted is honest.

Zoe says that Ted is honest.

Bob accuses Alice of being a thief.

Zoe accuses Carol of being a thief.

Sybil says that Ted is honest.

Alice accuses Zoe of being a thief.

Carol says that Zoe is honest.

Zoe says that Sybil is honest.

Use the graph below to chart the testimonies. Visualizing the data can help you to determine who may be the thief/thieves! Draw arrows between the names to see what type of claim a suspect has made about another suspect. It's encouraged that you use different types of lines (e.g., dotted, colored) to distinguish between claims of honesty and thievery.



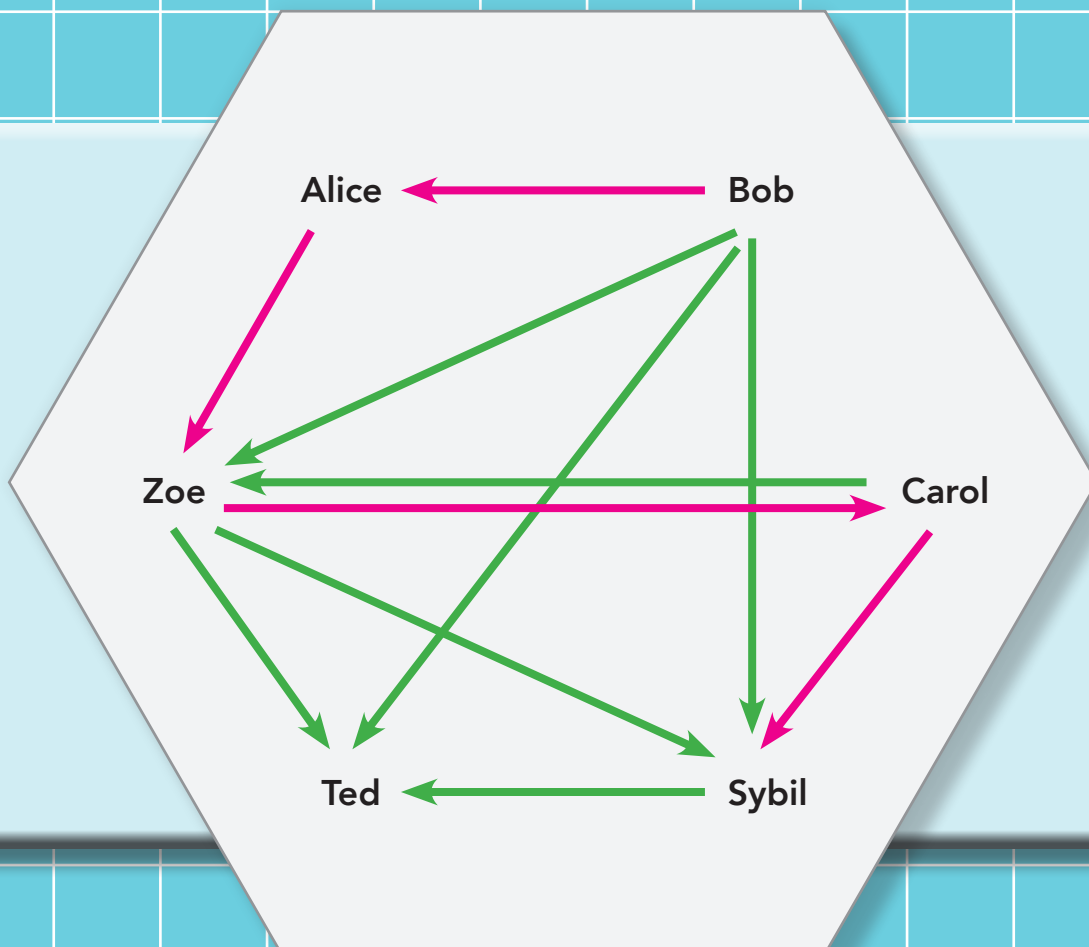
Gold Thieves 2

Whenever there is an accusation, then at least one of the accusers or accused is a thief. Since **Carol** accuses **Sybil**, **Bob** accuses **Alice**, **Zoe** accuses **Carol**, and **Alice** accuses **Zoe**, you know that one or two of these accusers/accused (**Carol**, **Sybil**, **Bob**, **Alice**, **Zoe**) must've stolen the gold.

Zoe cannot be a thief, because at least three people would have to be thieves as well (**Zoe**, **Carol** or **Sybil**, and **Bob** or **Alice**).

Because **Zoe** accuses **Carol** of being a thief and says that **Sybil** is honest, **Zoe** is telling the truth. Therefore, **Carol** must be a thief. Since **Zoe** is not a thief, **Alice** must be a thief.

Therefore, **Carol** and **Alice** must be the thieves.



Logic and the Art of Reasoning

Gold Thieves 3

Alice, Bob, Carol, Sybil, and Ted are suspects of a crime: two gold pieces have been stolen. The group is made up of thieves and non-thieves. There can be, at most, two thieves. Thieves may sometimes tell the truth, and sometimes lie. Non-thieves will always tell the truth. **Your job is to identify the thief/thieves!**

Following are the suspects' testimonies:

Alice says that **Sybil** is **honest**.

Alice says that **Carol** is **honest**.

Sybil accuses **Ted** of being a **thief**.

Ted accuses **Carol** of being a **thief**.

Carol says that **Alice** is **honest**.

Bob says that **Sybil** is **honest**.

Bob says that **Ted** is **honest**.

Carol says that **Sybil** is **honest**.

Ted says that **Alice** is **honest**.

Carol says that **Bob** is **honest**.

Use the graph below to chart the testimonies. Visualizing the data can help you to determine who may be the thief/thieves! Draw arrows between the names to see what type of claim a suspect has made about another suspect. It's encouraged that you use different types of lines (e.g., dotted, colored) to distinguish between claims of honesty and thievery.

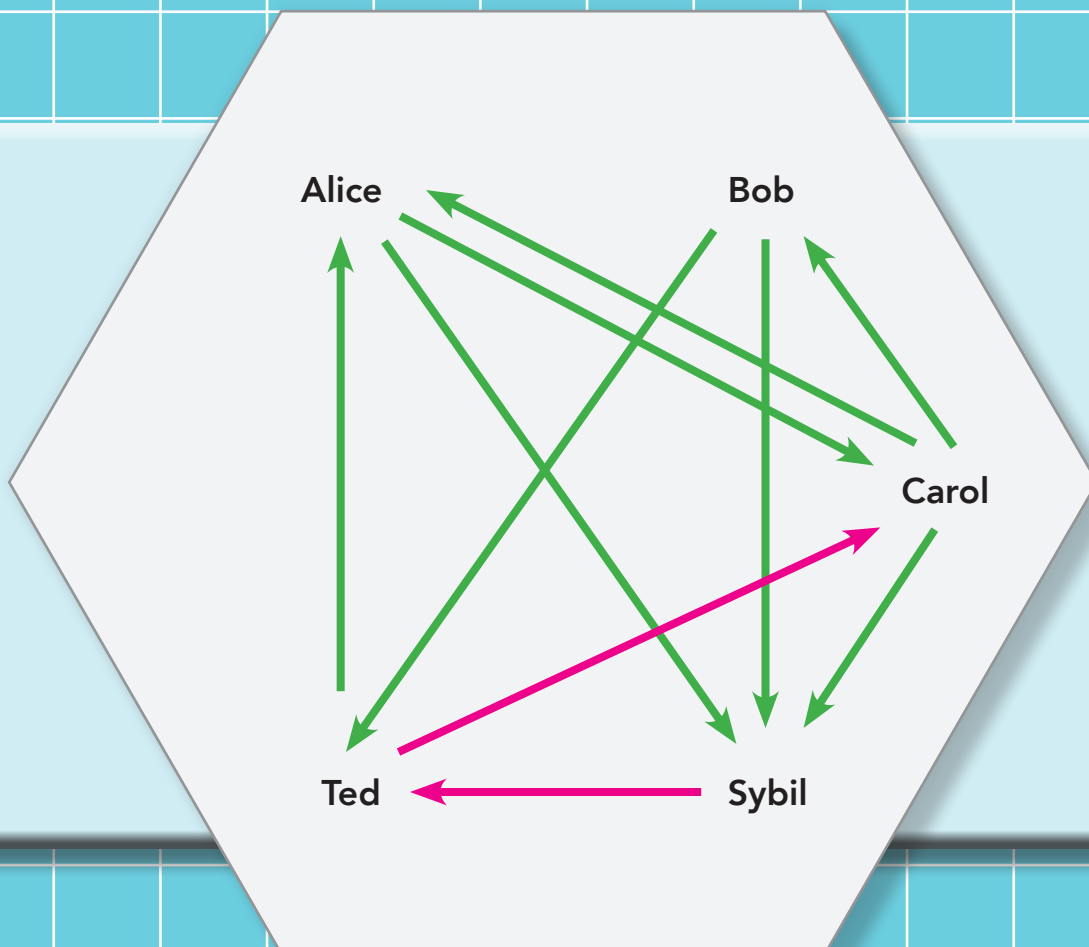


Gold Thieves 3

Whenever there is an accusation, then at least one of the accusers or accused is a thief. Since **Sybil** accuses **Ted** and **Ted** accuses **Carol**, you know that one or two of these accusers/accused (**Sybil**, **Ted**, **Carol**) must've stolen the gold.

Bob and **Alice** are not accused of being thieves, but one of them could be a thief along with either **Sybil**, **Ted**, or **Carol**. However, **Bob** and **Alice** both claim that **Sybil** is honest, so **Sybil** must be honest.

Therefore, **Ted** is a thief. And since **Bob** says that **Ted** is honest, **Bob** must be a thief as well.



Logic and the Art of Reasoning

Code Breakers 4

Below are groups of images followed by their translation to English. Your job is to determine what each image means. Each image corresponds to a single word. Note that the order of the images may not be the same as the order of the English words.

1

Code Sequence



English Translation

big Bob heard small Alice

2

Code Sequence



English Translation

big Bob heard small Carol

3

Code Sequence



English Translation

big Bob saw big Carol

4

Code Sequence



English Translation

small Carol saw small Bob



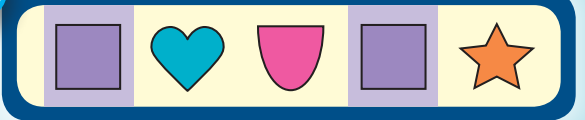

How would you decode , , , , , , and  ?

Code Breakers 4

By comparing sentences ① and ②, you'll see that "Alice" is only in sentence ① while "Carol" is only in sentence ②. Therefore, ▲ must decode to "Alice" and ★ must decode to "Carol".

①	Code Sequence 	English Translation 
②	Code Sequence 	English Translation 

"big" appears twice in sentence ③, so ▼ must decode to "big". "saw" appears only in sentences ③ and ④, so ♪ must decode to "saw". Therefore, ♥ must decode to "Bob".

③	Code Sequence 	English Translation 
④	Code Sequence 	English Translation 

"small" appears twice in sentence ④, so ■ must decode to "small". Therefore, the only remaining un-decoded symbol, ○, must decode to "heard".

▲ = Alice ♥ = Bob ○ = heard ♪ = saw
 ★ = Carol ▼ = big ■ = small

Logic and the Art of Reasoning

Table Puzzle 6

There are eight people sitting around a table. Their names are **Alice**, **Bob**, **Carol**, **Jack**, **Jill**, **Sybil**, **Ted**, and **Zoe**. Your job is to figure out where they're sitting.

You are given the following five hints (**H1-H5**):

- H1) Bob is two seats to Ted's left.
- H2) Bob is four seats to Jill's left.
- H3) Carol is two seats to Alice's left.
- H4) Carol is five seats to Zoe's left.
- H5) Jack is two seats to Sybil's left.

Can you find an arrangement of people that satisfies these conditions?

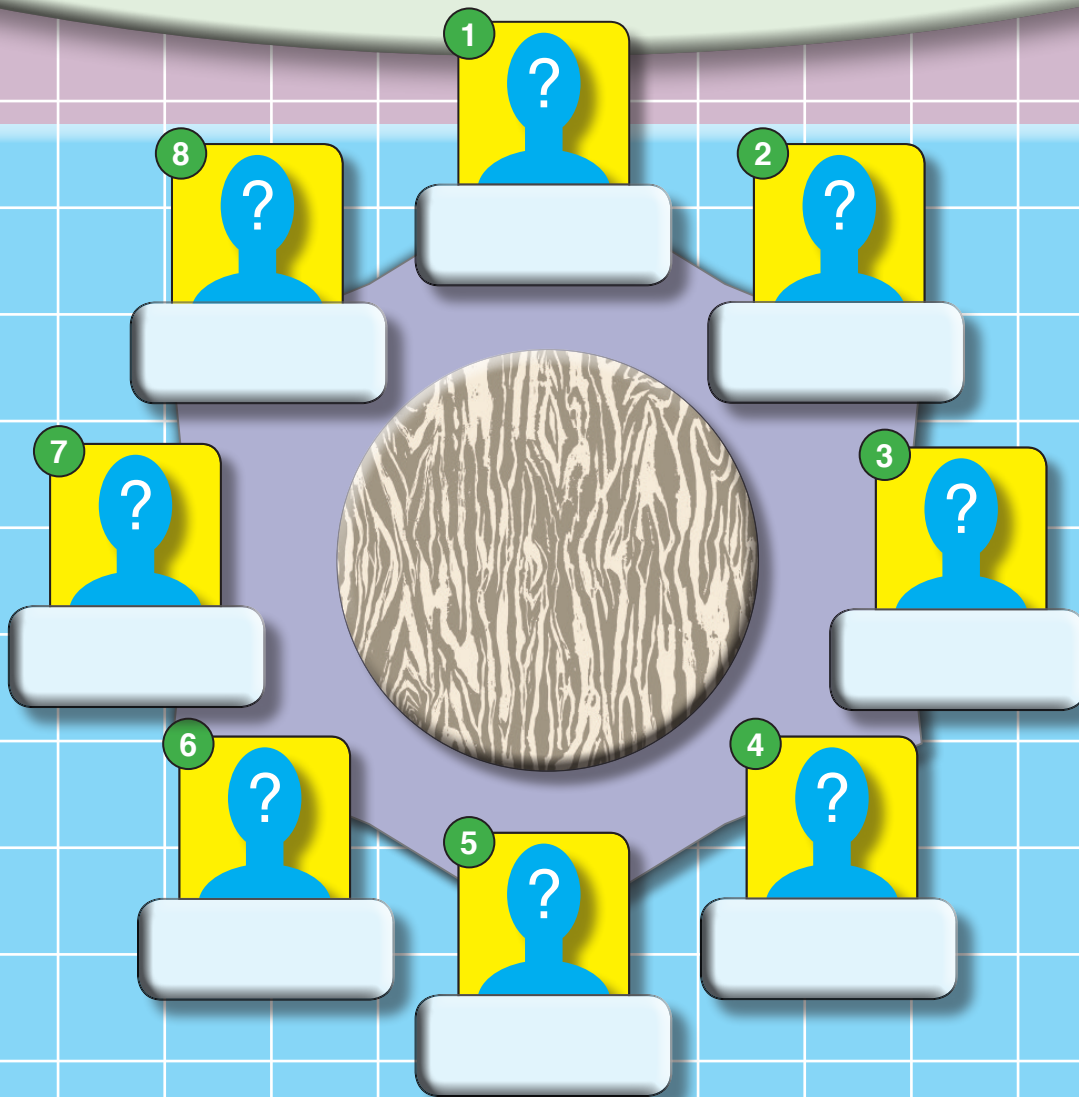
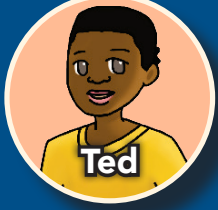
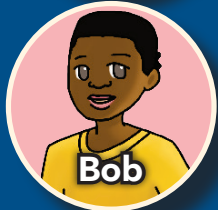
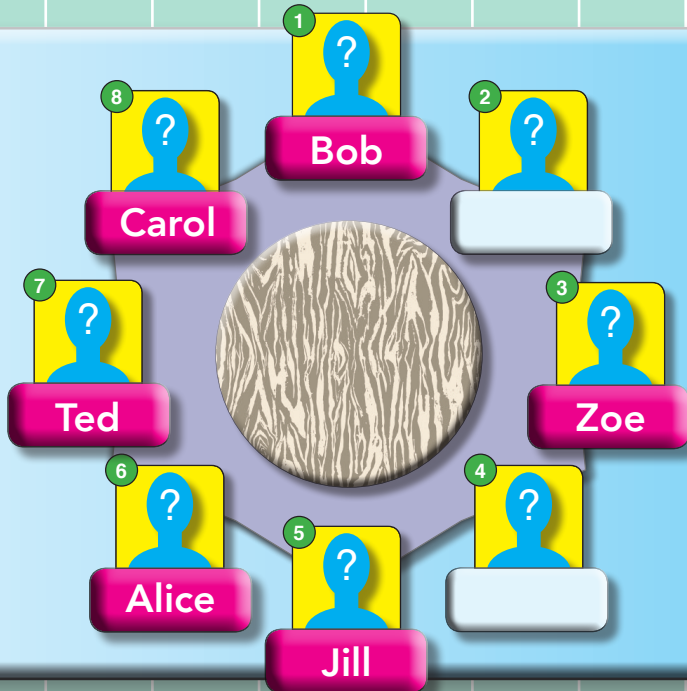


Table Puzzle 6



Let's put **Bob** at position 1. **H1** (*Bob is two seats to Ted's left*) places **Ted** at position 7. **H2** (*Bob is four seats to Jill's left*) places **Jill** at position 5. **H3** (*Carol is two seats to Alice's left*) and **H4** (*Carol is five seats to Zoe's left*) places **Carol** at position 8. Subsequently, **Alice** and **Zoe** would be seated at positions 6 and 3, respectively.



The only hint left is **H5** (*Jack is two seats to Sybil's left*). Since only two seats remain, **Sybil** would be placed at position 2 and **Jack** would be placed at position 4.

