



Worksheet 31: Location and Transformation

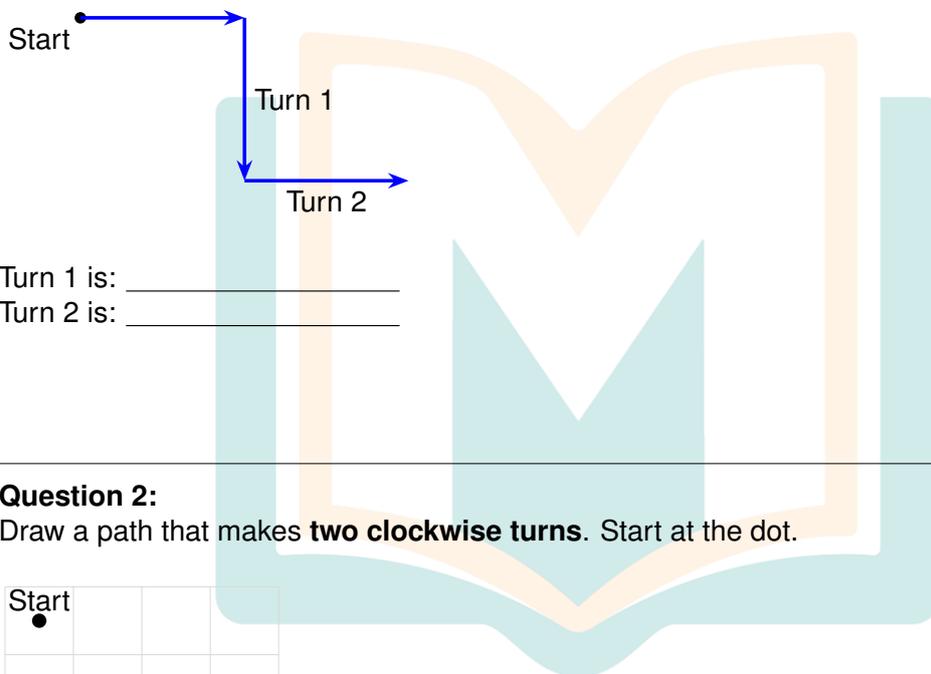
Name: _____ Date: _____

Score: _____

Section 1: Fluency (Questions 1–10)

Question 1:

Look at the diagram below. Starting from the dot, follow the path and write whether each turn is **clockwise** or **anticlockwise**.

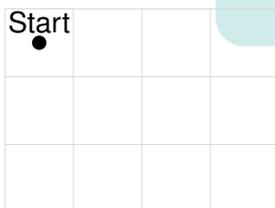


Turn 1 is: _____

Turn 2 is: _____

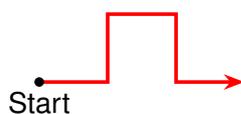
Question 2:

Draw a path that makes **two clockwise turns**. Start at the dot.



Question 3:

The path below makes straight turns. Count how many **left turns** (anticlockwise) are made.

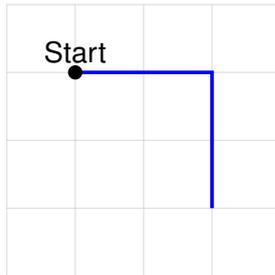




Number of left turns: _____

Question 4:

Complete the path to make a square. All turns should be **clockwise**.



Question 5:

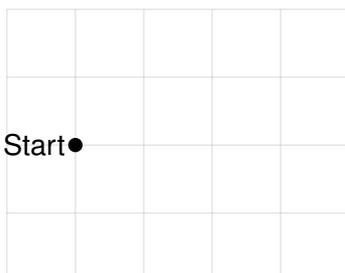
Look at this path. Write **C** for clockwise or **A** for anticlockwise for each turn.



Turn 1: _____ Turn 2: _____ Turn 3: _____

Question 6:

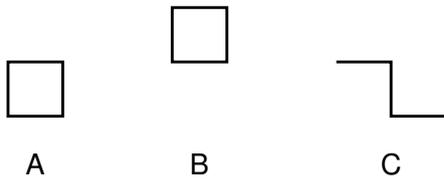
Draw a path that goes forward, makes an **anticlockwise turn**, goes forward again, then makes a **clockwise turn**.





Question 7:

Circle the diagram that shows a path with **only clockwise turns**.



Answer: _____

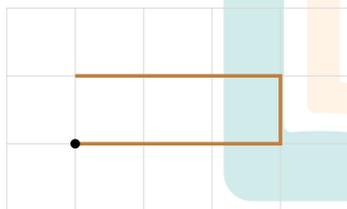
Question 8:

A robot starts facing **East**. It makes a **clockwise turn**. Which direction is it now facing?

Answer: _____

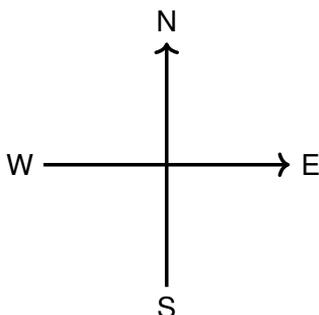
Question 9:

Draw the missing side to complete this rectangle. The turns must all be straight (90°).



Question 10:

Look at the compass rose. Starting facing **North**, if you make **two clockwise turns**, which direction will you face?





Answer: _____



Good Job!

Why did the robot go in circles? Because it couldn't find its algorithm!





Section 2: Reasoning (Questions 11–20)

Question 11:

Emma walks East for 5 steps, makes an **anticlockwise turn**, then walks 3 more steps. What direction is she walking now?

Answer: _____

Question 12:

A bee flies in a square pattern around a flower. It makes 4 turns. Are the turns **all clockwise**, **all anticlockwise**, or **mixed**?

Answer: _____

Question 13:

Jake is facing South. He makes two anticlockwise turns. Which direction is he facing now?

Answer: _____

Question 14:

Draw a path that starts going North, makes a clockwise turn to go East, then makes another clockwise turn.



Question 15:

A car drives around a block that is shaped like a rectangle. How many turns does it make? Are they clockwise or anticlockwise if it goes around clockwise?

Number of turns: _____

Type of turns: _____



Question 16:

Look at the path below. If you walk this path backwards (from end to start), will the turns be clockwise or anticlockwise?



Answer: _____

Question 17:

Sarah wants to walk in a triangle. She walks forward, makes a clockwise turn, walks forward, makes another clockwise turn, then walks back to the start. How many turns did she make in total?

Answer: _____

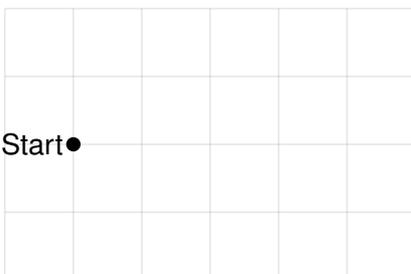
Question 18:

A robot is programmed to turn right (clockwise) three times in a row. If it starts facing East, what direction will it face after all three turns?

Answer: _____

Question 19:

Draw a path with exactly 3 anticlockwise turns and 1 clockwise turn.





Question 20:

Tom walks in the shape of the letter "L". He walks North, then makes one turn and walks East. Was his turn clockwise or anticlockwise?

Answer: _____



Good Job!

What did the compass say to the map? "You give me direction in life!"

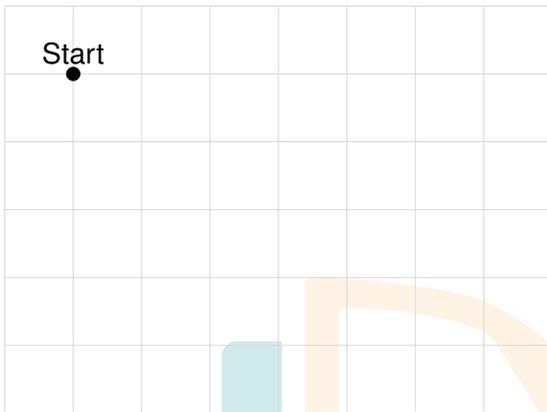




Section 3: Challenge (Questions 21–30)

Question 21:

Design a maze path with at least 5 turns. Label each turn as C (clockwise) or A (anticlockwise).



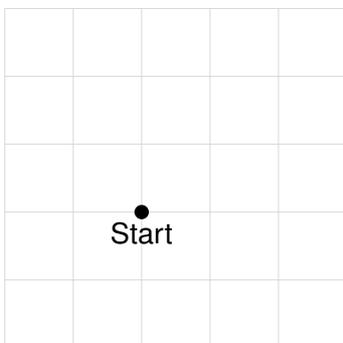
Question 22:

A snail crawls in a spiral. It makes 8 turns, all in the same direction. If the spiral goes inward (getting tighter), are the turns clockwise or anticlockwise if the snail starts going East?

Answer: _____

Question 23:

Lisa is playing a game. She must make exactly 4 clockwise turns and end up facing the same direction she started. Is this possible? Draw a path to show your answer.



Answer: _____



Question 24:

A bird flies in a hexagon (6-sided shape). How many turns does it make? If all turns are in the same direction, what are they?

Number of turns: _____

Direction: _____

Question 25:

Create your own path that spells the first letter of your name. Mark where the turns are and label them C or A.



Question 26:

If you make 3 clockwise turns followed by 3 anticlockwise turns, and you started facing North, which direction are you facing now?

Answer: _____

Explain: _____

Question 27:

A dancer spins clockwise. How many quarter turns (90° turns) must they make to face the opposite direction from where they started?

Answer: _____



Question 28:

Draw two different paths from Start to End. One path should use only clockwise turns, the other only anticlockwise turns.



Question 29:

A plane takes off facing East. It makes a left turn (anticlockwise), flies straight, makes another left turn, flies straight again, and makes a third left turn. What direction is it facing now?

Answer: _____

Question 30:

Create a "treasure map" path with at least 6 turns. Write instructions like: "Walk 3 steps North, turn clockwise, walk 2 steps East..." and draw the path.



Instructions:



 **Good Job!**
Why do pirates make terrible dancers? Because they have two left feet... and they can't tell which way is clockwise!





Answer Key

Worksheet 31: Location and Transformation

Question 1:

Turn 1: Clockwise

Turn 2: Anticlockwise

Question 2:

Drawing should show two right turns in sequence (e.g., L shape or staircase down-right).

Question 3:

2 left turns

Question 4:

Drawing should complete the square with two more sides, all turns right/clockwise.

Question 5:

Turn 1: C

Turn 2: C

Turn 3: C

Question 6:

Drawing should show: forward → left turn → forward → right turn.

Question 7:

A

Question 8:

South

Question 9:

Drawing should close the rectangle with the bottom left side.

Question 10:

South

Question 11:

North

Question 12:

All clockwise OR all anticlockwise (depending on direction)

Question 13:

North

Question 14:

Drawing: North → right turn East → right turn South

Question 15:

4 turns; All clockwise (if going clockwise)

Question 16:

Anticlockwise (opposite of forward direction)

Question 17:

3 turns

Question 18:

South

Question 19:

Drawing should show path with 3 left turns and 1 right turn.

Question 20:

Clockwise

Question 21:

Check student drawing for correct labeling of C and A turns.

Question 22:

Clockwise (for inward spiral starting East)

Question 23:

Yes; drawing should show a square or rectangle (4 right turns returns to start direction).

Question 24:

6 turns; All clockwise OR all anticlockwise

Question 25:

Check student's creative path spelling their initial with labeled turns.

Question 26:

North; Explanation: 3 clockwise turns net to West; 3 anticlockwise turns cancel back to North.

Question 27:

2 quarter turns (180°)

Question 28:

Check two distinct paths: one with only right turns, one with only left turns.

Question 29:

South

Question 30:

Check student's treasure map for coherent instructions and matching path drawing.

