Name: _____

Java Conditional Statements

What are Conditional Statements?

A **conditional statement** lets your program make decisions. It checks if something is true or false, then decides what to do next. Conditional statements help your program choose different paths, just like you make choices in real life.

In Java, we use these keywords to make decisions:

- **if** - "If this is true, do something"
- **else if** - "If the first wasn't true, but this is true, do something else"
- **else** - "If nothing else was true, do this"

Simple Analogy: Conditional Statements are Like Traffic Rules

Think about what you do when you see different traffic lights:

- **Green light** → "IF the light is green, THEN go"
- **Yellow light** → "ELSE IF the light is yellow, THEN slow down"
- **Red light** → "ELSE (if it's red), THEN stop"

You look at the condition (the color of the light), and then you decide what action to take. Your program does the same thing!

Decision Making Process:
Look at condition → Is it true? → Yes: Do action A → No: Check next condition → Do action B

Types of Conditional Statements

Statement Type	When to Use	Pattern
if	When you have one condition to check	if (condition) { action }
if-else	When you have two choices	if (condition) { action1 } else { action2 }
if-else if-else	When you have multiple choices	if (condition1) { action1 } else if (condition2) { action2 } else { action3 }

Basic Pattern

```
if (condition) {
  // action to do if condition is true
}
```

Example 1: Simple if statement

```
int temperature = 75;
if (temperature > 70) {
  System.out.println("It's warm today!");
}
```

What happens: If temperature is greater than 70, print "It's warm today!"

Example 2: if-else statement

```
int age = 16;

if (age >= 18) {
  System.out.println("You can vote!");
} else {
  System.out.println("You cannot vote yet.");
}
```

What happens: If age is 18 or more, print "You can vote!" Otherwise, print "You cannot vote yet."

Example 3: if-else if-else statement

```
int score = 85;

if (score >= 90) {
  System.out.println("Grade: A");
} else if (score >= 80) {
  System.out.println("Grade: B");
} else if (score >= 70) {
  System.out.println("Grade: C");
} else {
  System.out.println("Grade: F");
}
```

What happens: The program checks each condition in order and prints the first grade that matches.

Comparison Operators

Operator	Meaning	Example
==	Equal to	age == 18
!=	Not equal to	name != "John"
>	Greater than	score > 90
<	Less than	temperature < 32
>=	Greater than or equal to	grade >= 70
<=	Less than or equal to	speed <= 55

Important Rules to Remember

- The condition inside parentheses **()** must be **true** or **false**
- Use curly braces **{}** to group the actions you want to happen
- Only ONE section of an if-else if-else statement will run
- The program checks conditions from top to bottom
- Use **==** to check if two things are equal (not just one **=**)

- The **else** part is optional - you don't always need it

Real-Life Example: Choosing What to Wear

```
int temperature = 45;
boolean isRaining = true;

if (temperature < 32) {
  System.out.println("Wear a heavy coat!");
} else if (temperature < 60) {
  System.out.println("Wear a jacket.");
} else {
  System.out.println("Wear a t-shirt.");
}

if (isRaining) {
  System.out.println("Don't forget your umbrella!");
}
```

Your Turn: Write Your Own Definition

What is a conditional statement? How would you explain it to a friend?

Write your definition in your own words:

Think of a real-life situation where you make decisions based on conditions. Write it as an if-else statement:

Example: "If it's sunny, I will go to the park. Else, I will read a book at home."

Your example: