Understanding Slope – Student Handout

# 📌 What Is Slope?

The slope of a line tells us how steep the line is.
We calculate slope using the formula:

slope = m = (y₂ - y₁) / (x₂ - x₁)

Where:
- (x₁, y₁) and (x₂, y₂) are two points on the line
- rise = y₂ - y₁
- run = x₂ - x₁

# 📈 Types of Slope

|  |  |  |
| --- | --- | --- |
| Type of Slope | Description | Example Line |
| Positive Slope | Goes up from left to right | / |
| Negative Slope | Goes down from left to right | \ |
| Zero Slope | Horizontal line | ― |
| Undefined Slope | Vertical line | | |

# ✏️ Example Problem

Find the slope between (1, 2) and (3, 6)

m = (6 - 2) / (3 - 1) = 4 / 2 = 2

# 🧠 Practice Problems

Find the slope between each pair of points:

1. (2, 3) and (4, 7)

2. (-1, 5) and (2, 5)

3. (0, 0) and (3, 1)

4. (1, 1) and (5, 3)

5. (2, 2) and (4, 6)

# 📝 Mini Quiz

1. What is the slope between (1, 1) and (5, 3)?

2. What kind of slope does a vertical line have?

3. What is the slope of a line through (3, -2) and (6, -2)?

4. What kind of slope does a line have if it goes downhill from left to right?

5. Calculate the slope between (2, 2) and (4, 6)

# ✅ Answer Key

## 🔹 Practice Problems Answers:

1. (7 - 3)/(4 - 2) = 4/2 = 2

2. (5 - 5)/(2 - (-1)) = 0/3 = 0

3. (1 - 0)/(3 - 0) = 1/3

4. (3 - 1)/(5 - 1) = 2/4 = 1/2

5. (6 - 2)/(4 - 2) = 4/2 = 2

## 🔹 Mini Quiz Answers:

1. (3 - 1)/(5 - 1) = 2/4 = 1/2

2. Undefined

3. (-2 - (-2))/(6 - 3) = 0/3 = 0

4. Negative

5. (6 - 2)/(4 - 2) = 4/2 = 2