MA 109: September 28

Transformations: Shifts, Scales, and Reflections

# Start of Class

## Instructor Information

Name:

Email:

Office Hours:

## Warm-up Questions

# Notes

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**Example:** Suppose 𝑓(𝑥) is given in the graph to the right. Draw the graph of 𝑓(𝑥)−4.

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**Example:** Suppose 𝑓(𝑥) and 𝑔(𝑥) are given in the graph to the right.

If 𝑓(𝑥) is our original function, write the formula for 𝑔(𝑥) in terms of 𝑓(𝑥).

**Example:** Suppose , and the graph of 𝑔(𝑥) is the same as that of 𝑓(𝑥), but shifted left by 7. Write the formula for 𝑔(𝑥).

**Example:** Suppose and . What transformation took 𝑓(𝑥) to 𝑔(𝑥)?

A picture containing line, diagram, plot, parallel

Description automatically generated**Example:** Suppose 𝑓(𝑥) is given in the graph to the right. Draw the graph of .

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**Example:** Suppose 𝑓(𝑥) and 𝑔(𝑥) are given in the graph to the right.

If 𝑓(𝑥) is the original function, write the formula for 𝑔(𝑥) in terms of 𝑓(𝑥).

**Example:** Suppose , and the graph of 𝑔(𝑥) is the same as that of 𝑓(𝑥), but flipped vertically over the 𝑥-axis. Write the formula for 𝑔(𝑥).

**Example:** Suppose and . What transformation took 𝑓(𝑥) to 𝑔(𝑥)?

# End of Class

Write a summary of what you learned today:

What questions do you have about the material from today?

What do you need to do between now and the next class meeting?