

# Microscope Basics

Name \_\_\_\_\_ Date \_\_\_\_\_

## PURPOSE

Learn to use a simple microscope.

HOW TO DO THIS COURSE: Do the steps in order. Write your initials and the date on the sign-off line when you finish a step. Two lines means you get the step checked by another student or, if stated, by your teacher. Have them initial the second line. All written work is turned in to your teacher.

ESTIMATED TIME: 5 hours.

BOOK:

*Microscope Basics*, Heron Books

## A. MEET THE MICROSCOPE

1. READ: *Microscope Basics*, Chapter 1 The Microscope. \_\_\_\_\_
2. ACTIVITY: Get a magnifying glass and use it to look at some small things, like your fingerprints, a hair, a bug, the edge of a leaf and so on. Draw a picture of one of these that shows something you couldn't see without the lens. Show it to your teacher and explain what it is.  
**Teacher pass.** \_\_\_\_\_
3. READ: Chapter 2 Slides. \_\_\_\_\_
4. ACTIVITY: Look at a plain slide, some prepared slides and a cover slip. \_\_\_\_\_
5. READ: Chapter 3 Parts of a Microscope \_\_\_\_\_

6. ACTIVITY: Find these parts on a real microscope:

- |   |   |
|---|---|
| <input type="checkbox"/> barrel         | <input type="checkbox"/> objective lenses   |
| <input type="checkbox"/> eyepiece       | <input type="checkbox"/> rotating nosepiece |
| <input type="checkbox"/> adjusting knob | <input type="checkbox"/> stage              |
| <input type="checkbox"/> handle         | <input type="checkbox"/> light              |
| <input type="checkbox"/> slide clips    | <input type="checkbox"/> base               |

\_\_\_\_\_

7. ACTIVITY: Have someone name the parts of a microscope listed in the last step. You show on a real microscope the parts named. Do this until you know what the parts are.

\_\_\_\_\_

8. ACTIVITY: Have someone point to a part of the microscope. You say what it is and what it is for. When you can do this easily with all the parts, show your teacher. **Teacher pass.**

\_\_\_\_\_

9. ACTIVITY: In this activity, you are going to practice setting up a microscope by following the steps in Chapter 4 How to Set Up a Microscope. With another student helping you, read and then do each of the steps. Then practice doing them over and over until you can set up a microscope easily.

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10. ACTIVITY: In this activity, you are going to practice looking at a slide by following the steps in Chapter 5 How to Look at a Slide. With another student helping you, read and then do each of the steps. Then practice doing them over and over until you can easily focus the microscope, change from one power to another, and correctly remove the slide.

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11. ACTIVITY: With your teacher watching, do the steps of setting up a microscope. Then show your teacher that you can focus the microscope and change from one power to another when you are looking at the slide. Also be sure to show that you can correctly remove the slide when you're done. **Teacher pass.**

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## B. USE THE MICROSCOPE

1. READ: Chapter 6 Drawing What You See. \_\_\_\_\_

2. ACTIVITY:

- Find Worksheets for Microscope Basics attached to the back of this learning guide. Write your name on the first one and write “talcum powder” as your object.
- Put a tiny bit of talcum powder (baby powder) on a slide. Do not put a cover slip on it. Look at the edge of the powder. Draw what you see using all three powers.

**Teacher pass.** \_\_\_\_\_

3. ACTIVITY:

- Find the next worksheet, write your name and “table salt” as your object.
- Put a *tiny* bit of table salt on a slide. Do not put a cover slip on it. Draw what you see using all three powers.

**Teacher pass.** \_\_\_\_\_

4. ACTIVITY:

- Find the next worksheet, write your name and “sugar” as your object.
- Put a *tiny* bit of sugar on a slide. Do not put a cover slip on it. Draw what you see using all three powers.

**Teacher pass.** \_\_\_\_\_

5. ACTIVITY:

- Find the next worksheet, write your name and “onion skin” as your object.
- Look at a prepared slide of onion skin. Draw what you see using all three powers.

**Teacher pass.**

\_\_\_\_\_

6. ACTIVITY:

- Find the next worksheet, write your name and “bug” as your object.
- Put a tiny bug or parts of a bug on a slide and squash it with a cover slip. You can also use a prepared slide of a bug. Draw what you see using all three powers.

**Teacher pass.**

\_\_\_\_\_

7. ACTIVITY:

- Find the next worksheet, write your name and “feather” as your object.
- Look at a prepared slide of a feather. Draw what you see using all three powers.

**Teacher pass.**

\_\_\_\_\_

8. ACTIVITY:

- Find the next worksheet, write your name and “bug with wings” as your object.
- Look at a prepared slide of a squashed gnat or other tiny bug with wings. Choose the power you think works the best. Draw part of a wing.

**Teacher pass.**

\_\_\_\_\_

9. ACTIVITY:

- Find the next worksheet, write your name and “pond water” as your object.
- Put a drop of dirty pond water on a slide and cover it with a cover slip. Choose the power you think works the best. Draw what you see.

**Teacher pass.**

\_\_\_\_\_

10. READ: Chapter 7 The Microscopic World.

\_\_\_\_\_

11. ACTIVITY: Find something else to look at. Choose the power you think works the best and using a worksheet, draw what you see. **Teacher pass.** (Student will need a microscope and a favorite slide for the exam.)

\_\_\_\_\_

I have completed the steps of this course. I understand what I studied and can use it.

Student \_\_\_\_\_ Date \_\_\_\_\_

The student has completed the steps of this course and knows and can apply what was studied.

Teacher \_\_\_\_\_ Date \_\_\_\_\_

The student has passed the exam for this course.

Examiner \_\_\_\_\_ Date \_\_\_\_\_

**FOR FACULTY**

**LEARNING GUIDE ATTACHMENT**

Worksheets for Microscope Basics

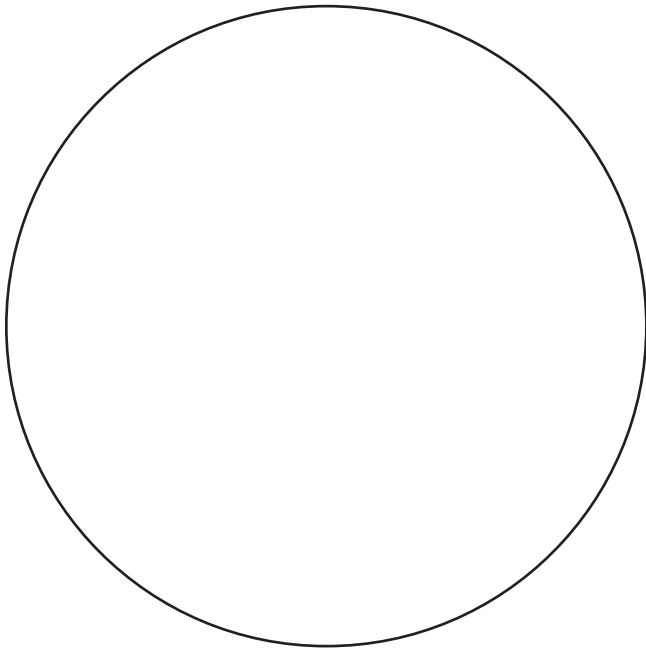
**ADDITIONAL RESOURCES**

Exam and answers

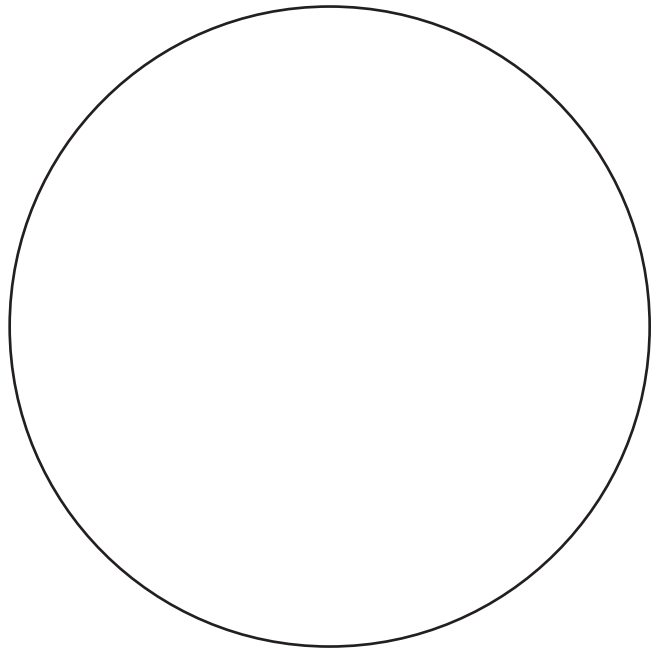
Materials list

# Worksheets for Microscope Basics

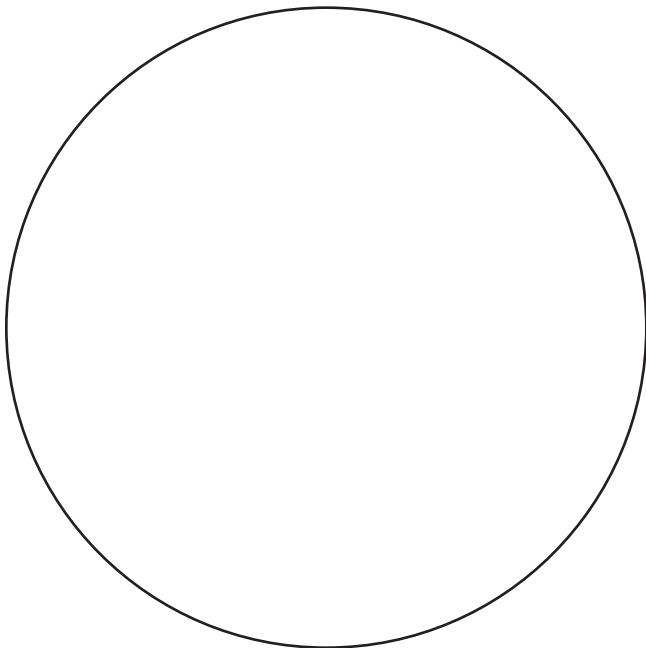
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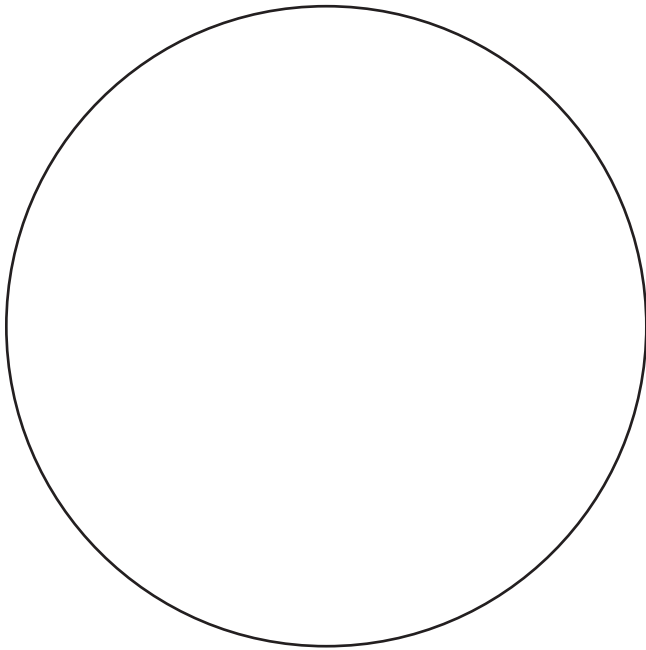


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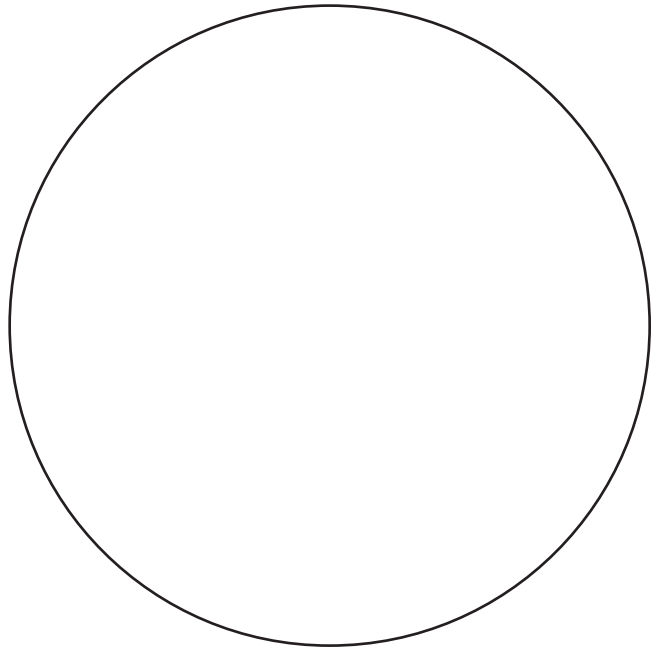




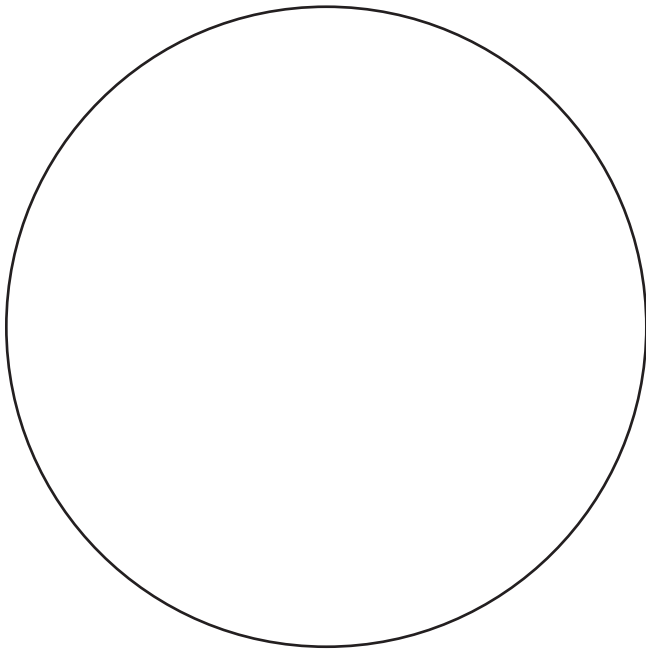
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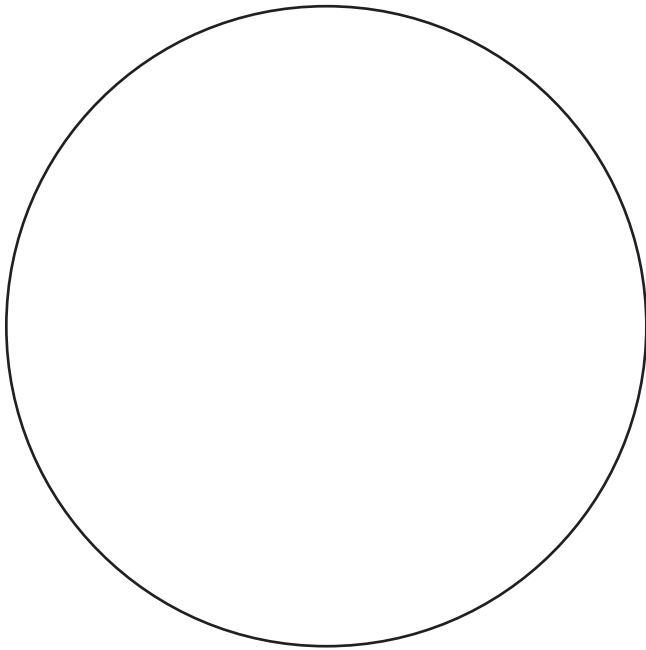
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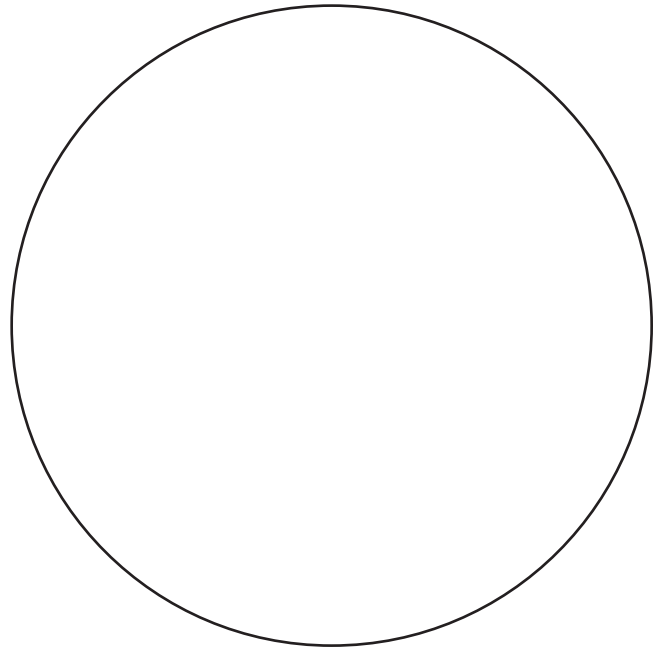
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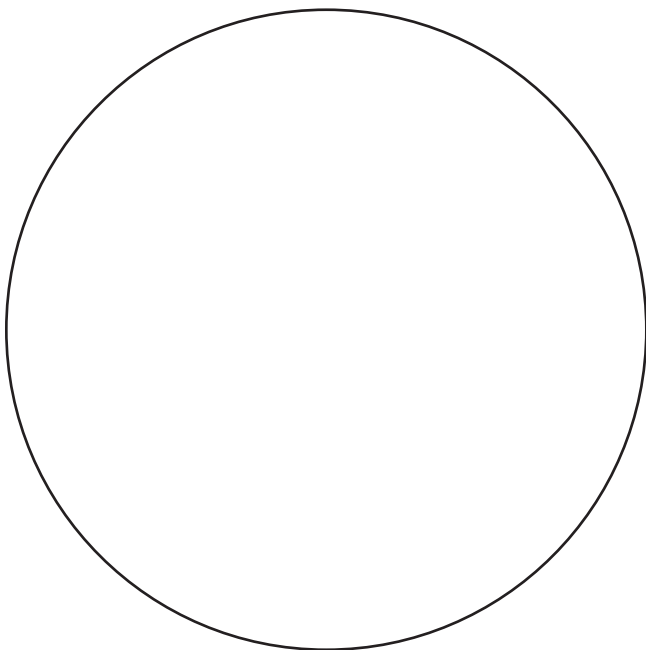
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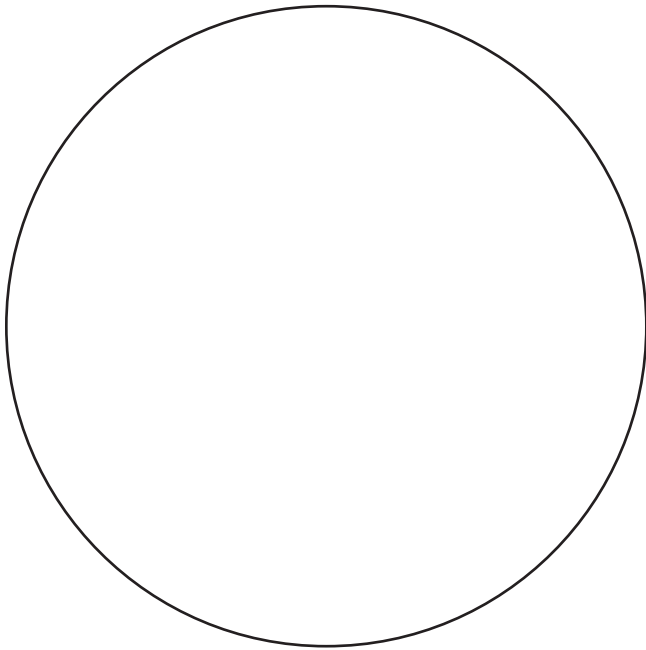
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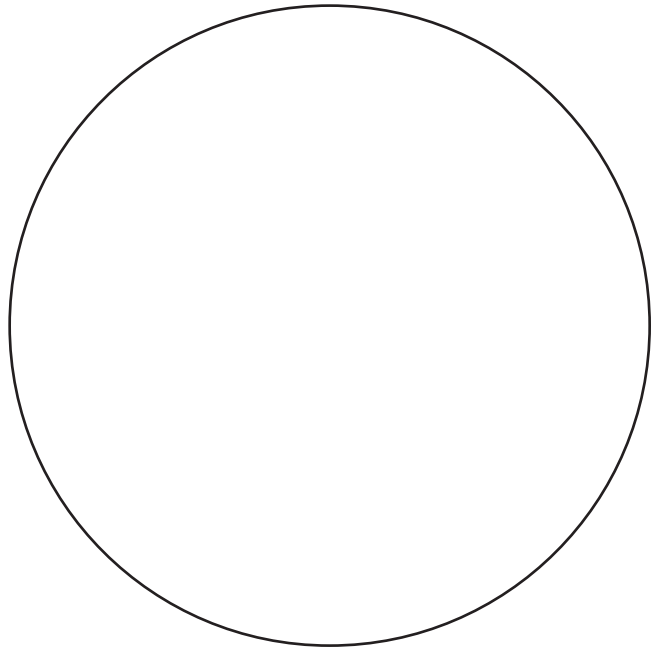
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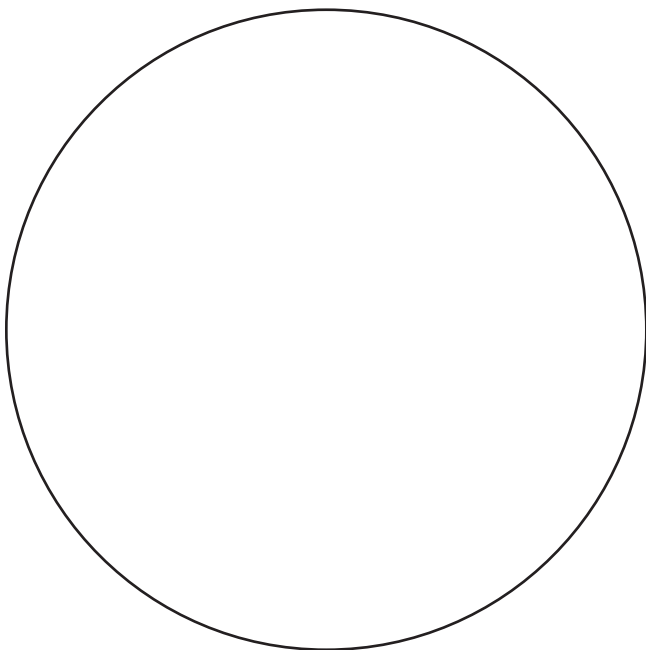
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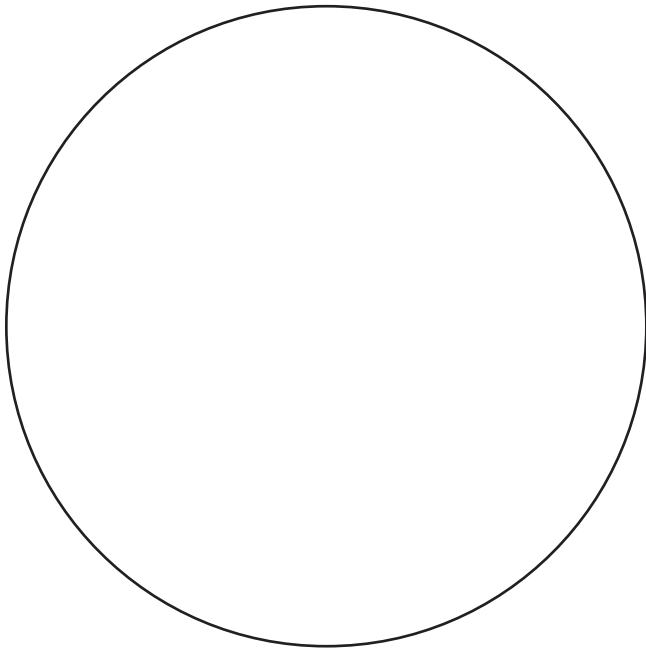
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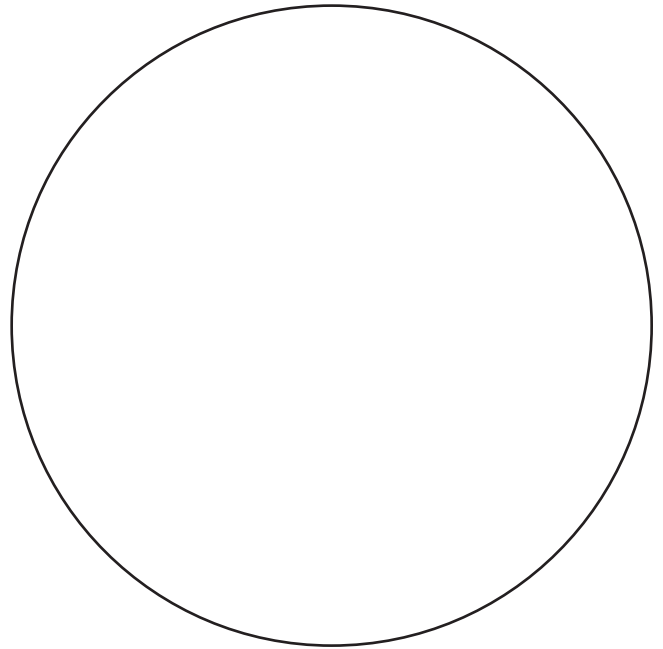
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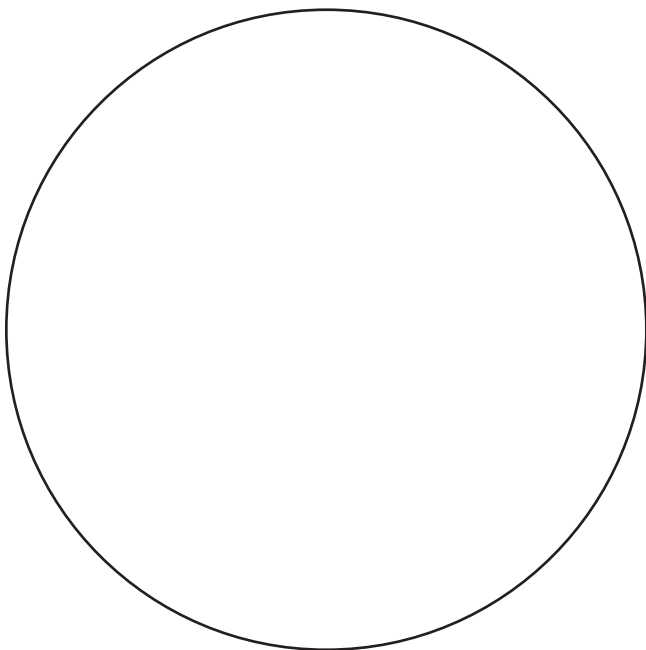
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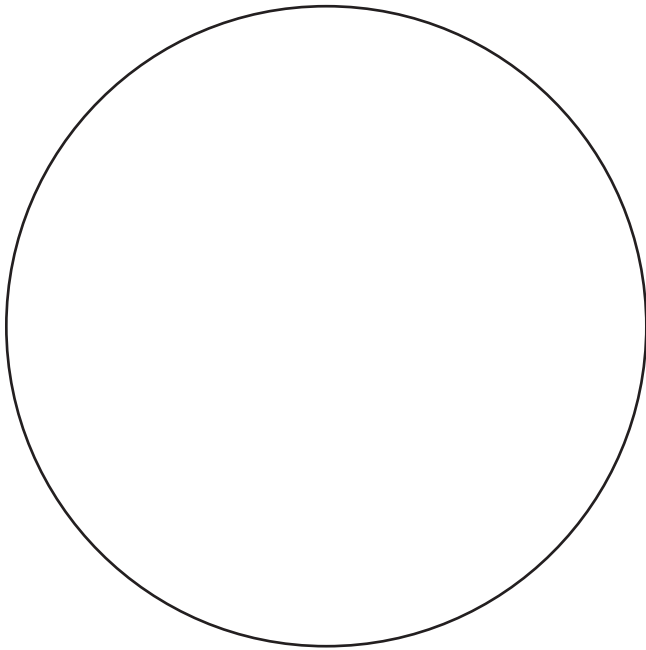


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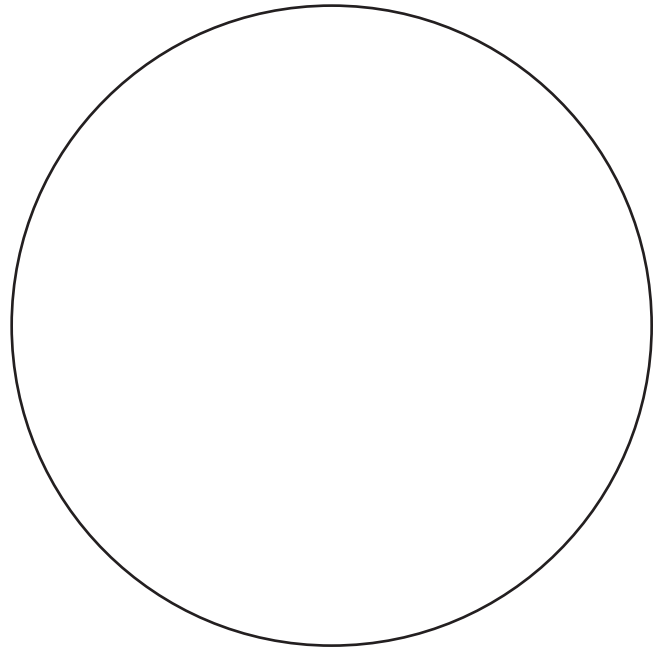




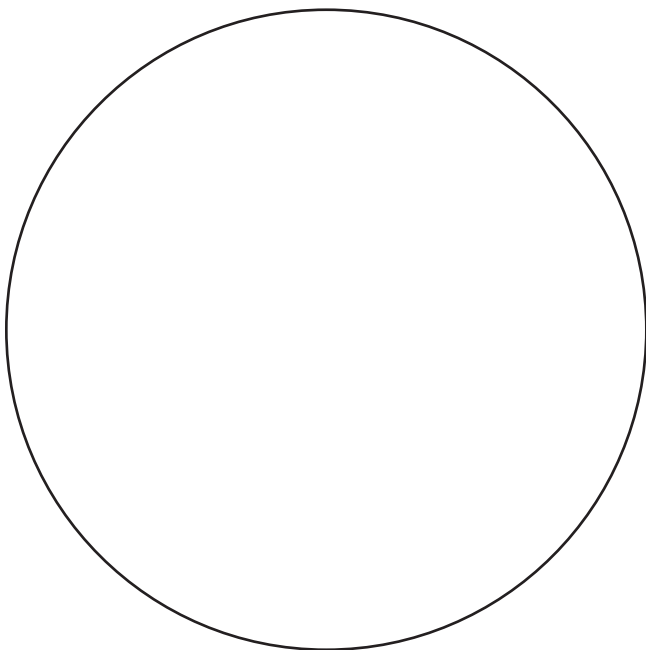
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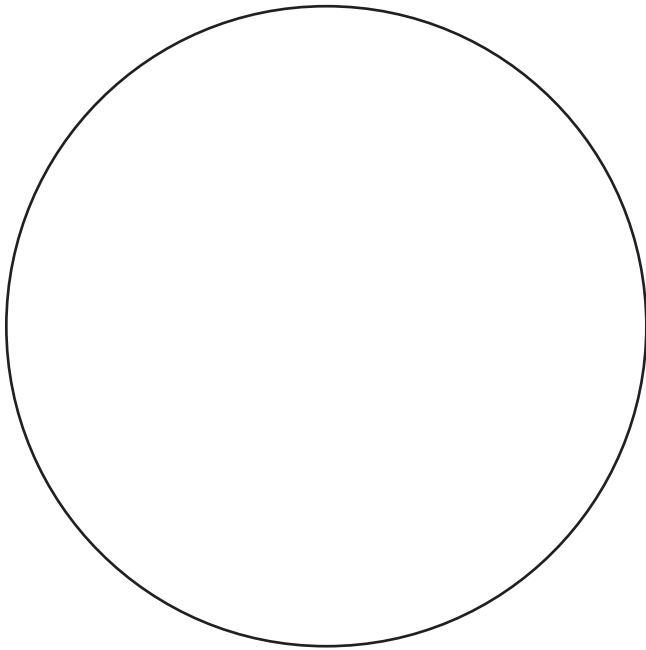
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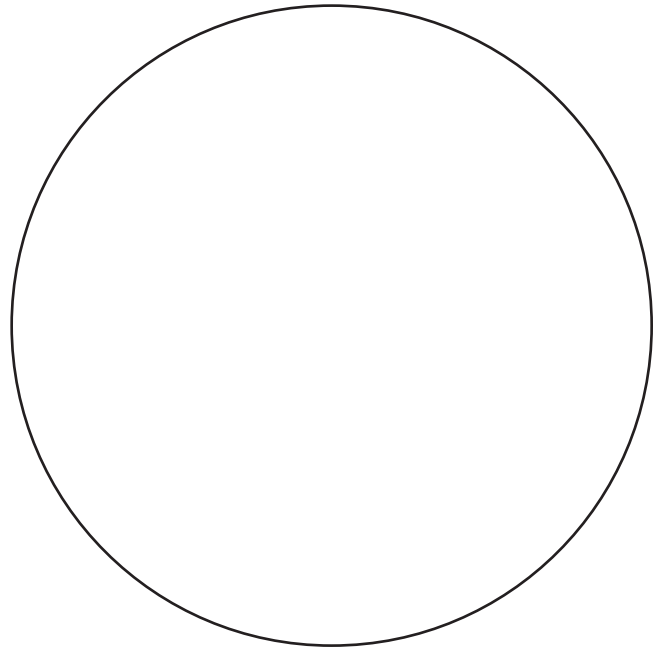
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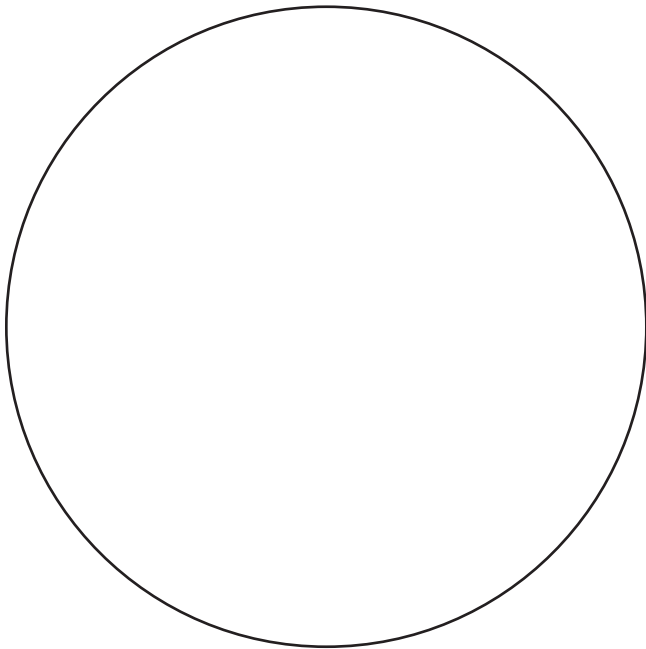
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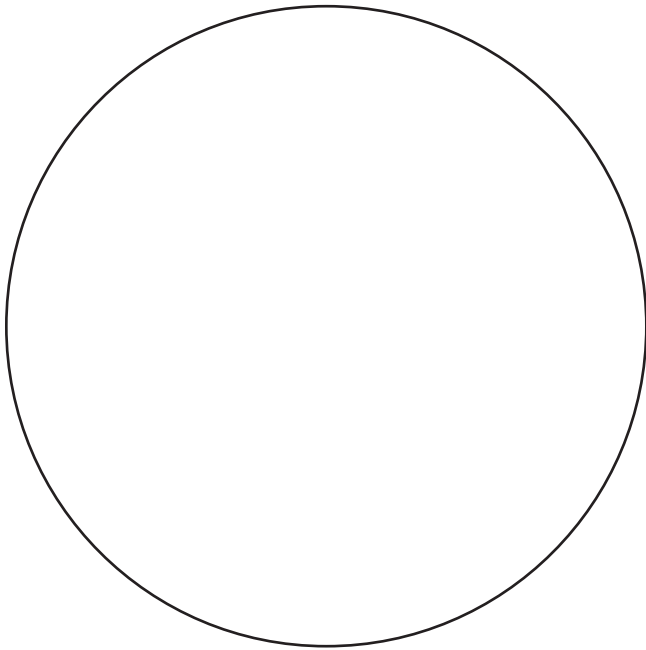
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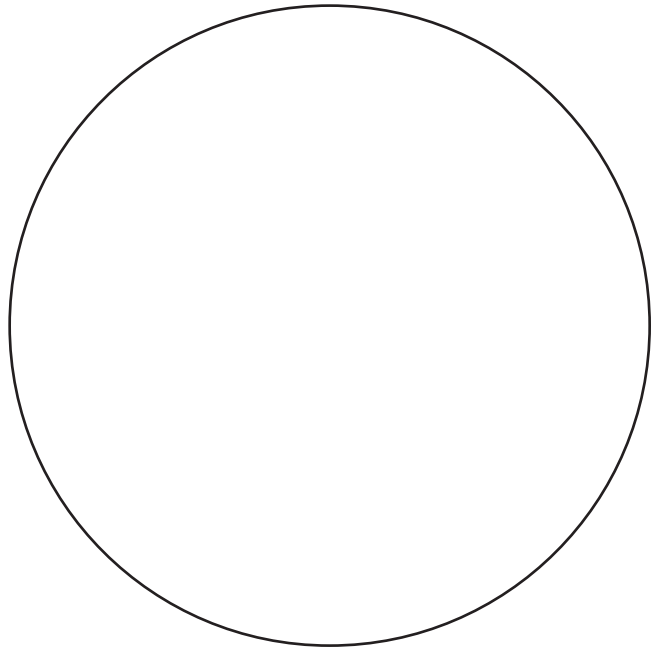
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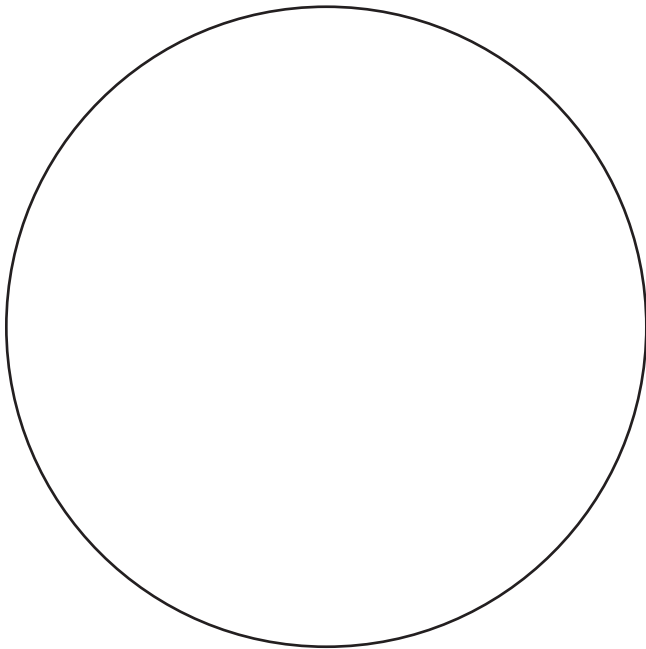
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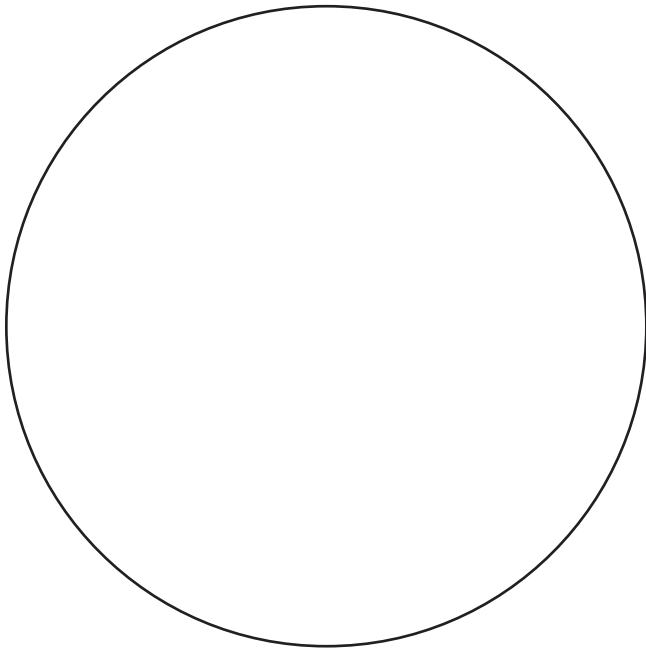
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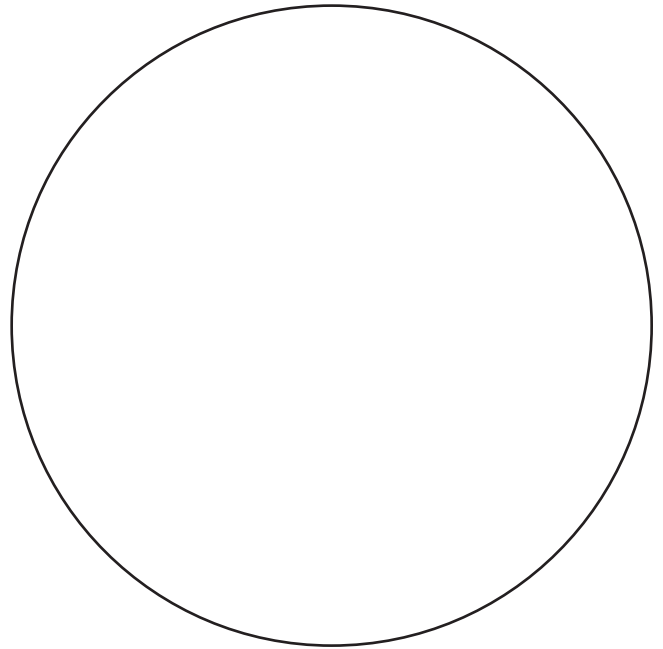
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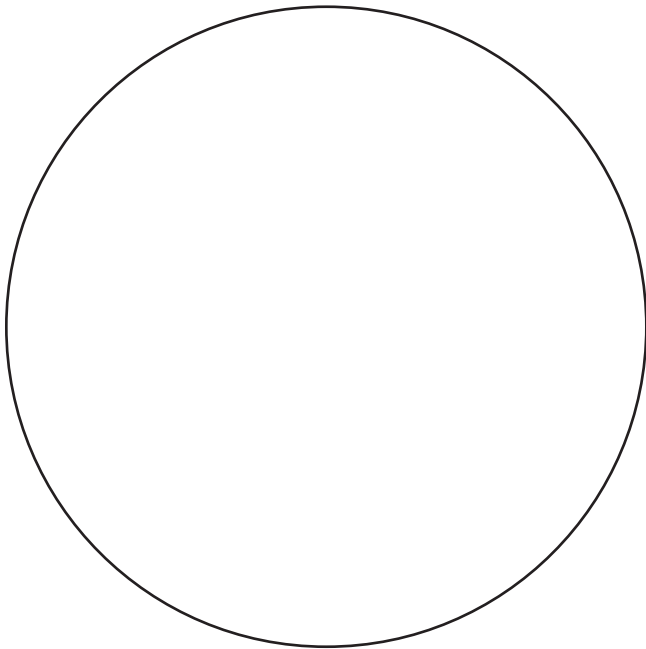
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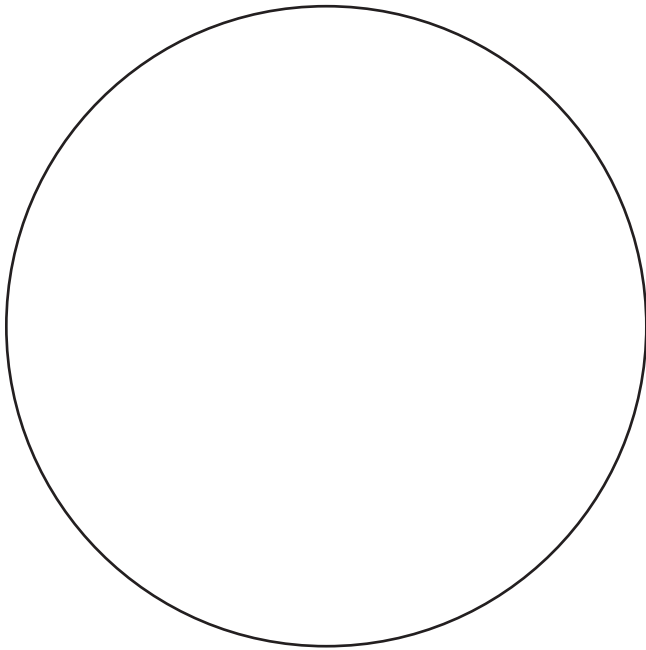


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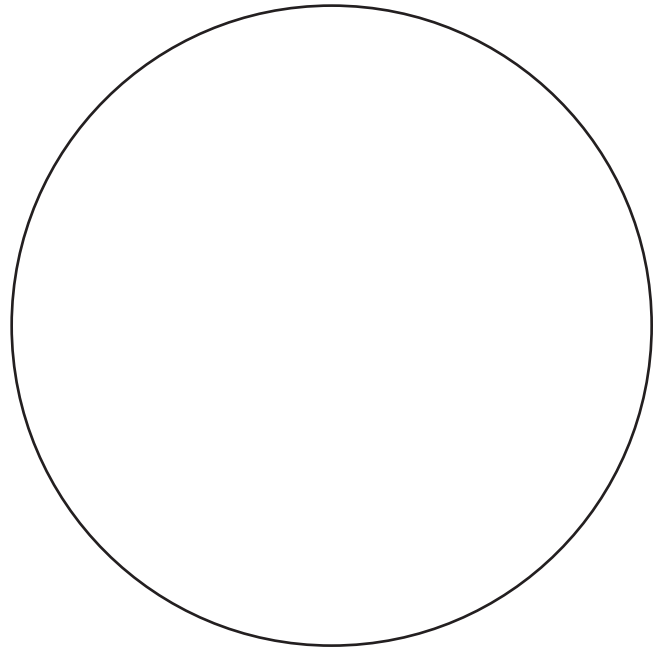




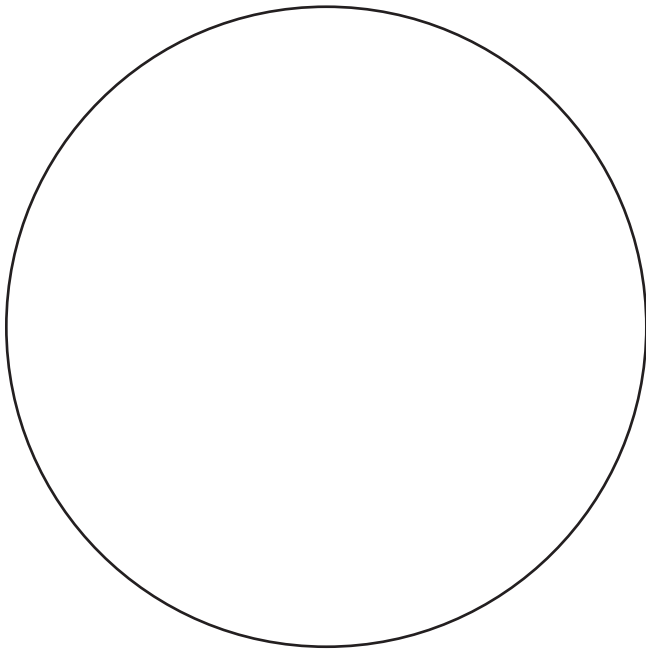
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