



Learning Project 8 Geometry – Area, Perimeter, & Volume

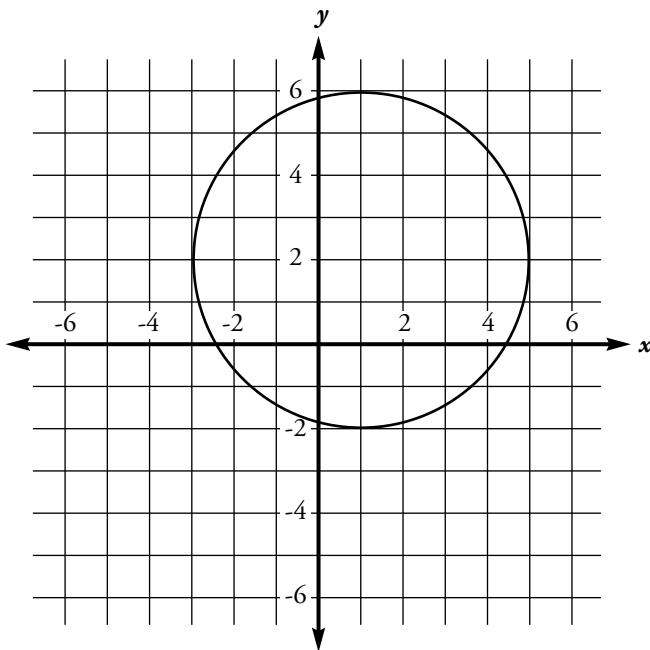
Inquiry Activity Geometry 8–4: Circles

(Note: Italicized portions should be directed to students.)

1. Identifying the Problem (Uses a variation of Item #22, PA) Calculator not allowed.

Read the question carefully, as you would if taking the actual test.

The graph of a circle is shown on the grid below.



**Calculator
NOT Allowed**



One side of each square on the graph equals 1 inch.

What is the circumference and area of the circle shown?

- 1) $C = 20.12''$ and $A = 50.25$ square inches
- 2) $C = 25.12''$ and $A = 50.25$ square inches
- 3) $C = 20.12''$ and $A = 40.25$ square inches
- 4) $C = 25.12''$ and $A = 40.25$ square inches
- 5) $C = 40.25''$ and $A = 20.12$ square inches

Here are some problem clarification questions you may want to consider when reading test questions.

What words and/or symbols might be important to understand to answer this problem and what are they telling you?

It is possible that learners would pick circumference, area of circle among others.

What words and/or symbols are unfamiliar and what do you think they mean?

Cannot know what words the learner will choose.

2. Becoming Familiar with the Problem

Ask yourself questions like these about the problem, taking note of the ones that were especially helpful so that you can remember to use them when you take the test.

Reread the question.

In your own words, what are you being asked to find?

Think about the knowledge you have of circles.

3. Planning and Performing Tasks

Try to answer the test question any way you can, even if you have to guess, but be aware of the reasoning and operations that you are using. The following questions can be helpful.

Try using the formulas page.

Estimate an answer.

Eliminate some of the answer choices and explain why you eliminated them.

Choose an answer and be ready to explain how you found your answer.

4. Sharing with Others

Telling other people what you know helps you to understand the material better. Take this opportunity not only to share your knowledge, but also to learn it more completely.

Small Groups: Compare your answer to others in the group and explain how you found it. If you have trouble agreeing on one answer, be ready to explain the reasons behind your disagreement.

Determine the various methods used to estimate an answer.

Explain any help you got from the formulas page.

Research the meaning of the unfamiliar words and/or symbols from this problem and the math terms circumference.

Whole class: Report your group's answer (or your disagreement over the answer) to this question, along with your estimation process, if any, that best helps you come to an answer, an explanation of how the formulas page can help, and the words and/or symbols and their definitions that were discussed in your group.

Take notes on any different ways that others used to find the answer.

5. Reflecting, Extending and Evaluating.

This Inquiry Activity culminates the discussion of perimeter and area in the context of a circle.

Reflect: Think about what you learned. (group activity or instructor led.)

Here are some questions to start you thinking about the experience you just had. Thinking about what you have learned and experienced is part of the learning process. When the focus is only on the answer, you don't get much time to think about what was learned.

Review all the different ways that were presented to find the answer to this problem and determine the most efficient method to solve the problem.

Can the fact that the circle is presented on graph paper help you in estimating area?



Would be able to count the full squares to find the area of the circle while estimating the partial squares to come up with an estimation.

Does the circle on graph paper help with estimating circumference?

Find the formula for the circumference of a circle on the formulas page. Discuss how to use the formula to solve the problem.

Find the formula for the area of a circle on the formulas page. Discuss how to use the formula to solve the problem.

Both the formula for circumference and area of a circle involve $\pi = 3.14$. Research in the text books what π is and how and why it is used in these formulas.

Extending: Extend what you learned to new situations.

In extending, you are being asked to transfer the information presented in the Practice Test question to other information or situations you already know and maybe make new connections to other information.

Discuss situations in your lives that would require you to use circles and the circumference of circles.

Tires on cars or bikes or equipment to fit rims.

Evaluating: Assess what you learned and how you learned it.

In this last step, you get a chance to review the content of what you learned and the methods used to learn. There are no right or wrong answers to these questions; it is your chance to look more closely at your learning style and the opportunity to state how you benefited or didn't benefit from the content and/or the methods to help you pass the GED test.

In step 5, Reflecting, Extending, Evaluating, how does the extending section help you to learn the subject?

Does extending your knowledge also help with test-taking? Explain

Ask for practice exercises in any of the areas covered in this Inquiry Activity if you think you need them.