

Short Answer


Academic Program



Education
Quality and
Accountability
Office

Directions to Students about Answering Short Answer Items

1. For this part of the assessment, make sure you have the following items along with *Booklet 3*:
 - a pencil and an eraser or a pen
 - a scientific or graphing calculator
 - a ruler and a protractor
2. Do all of your work (even rough work) in *Booklet 3*.
3. You will have 30 min to do these 10 items. That means you have about 3 min for each one. Give yourself time to answer all of the questions.
4. Figures in this section are not drawn to scale.
5. These questions are designed to get you to think deeply about the mathematics you know but they do not require you to write a great deal. Be sure to watch for the terms listed in the Key Words and Phrases in Instructions and do just what the prompt asks you to do.

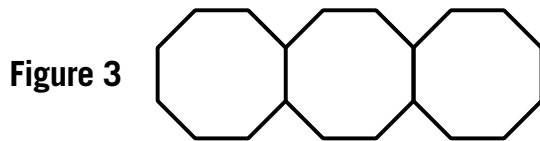
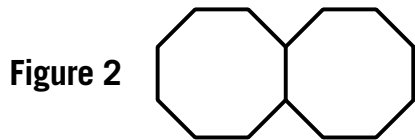
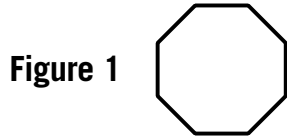
For example, the question might ask you to “**Explain** your answer.” The Key Words and Phrases in Instructions sheet says, “**Explain** means to use words and symbols to make your solutions clear and understandable.” As soon as you can explain a mathematical reason for the answer, do so. You do not need to provide lots of calculations to illustrate your point.
6. In short answer questions, you do not have to provide lots of examples to illustrate your answer. Write a short answer.
7. You have **30 min** to work.
8. When you see the  sign, you have completed *Booklet 3*. Check your answers. Then wait quietly for directions from your teacher.

1. The following octagons are constructed with toothpicks.

Paul is going to extend the pattern.

Determine how many toothpicks Paul would need to create a figure with 21 octagons.

Show your work.



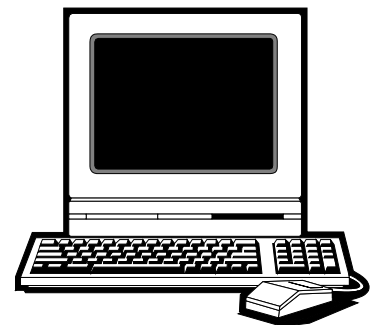
2. At Store A, a computer is regularly priced at \$1299.00. It is on sale for 20% off the regular price.

At Store B, the same computer is regularly priced at \$1549.00. It is on sale for 30% off the regular price.

Write calculations to **explain** why you should buy the computer at Store A.

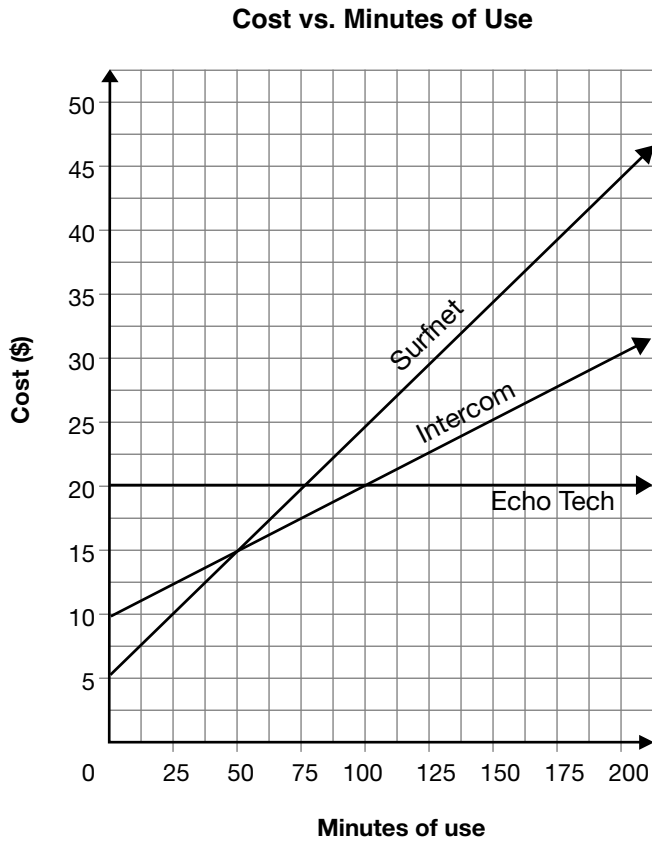
SALE
20% off

SALE
30% off



3. The graph shows the relationship between total cost and minutes of use for three Internet companies.

Tenisha wants to sign up with one of the companies and she wants to pay as little as possible. Her choice will depend on how many minutes of use she has.



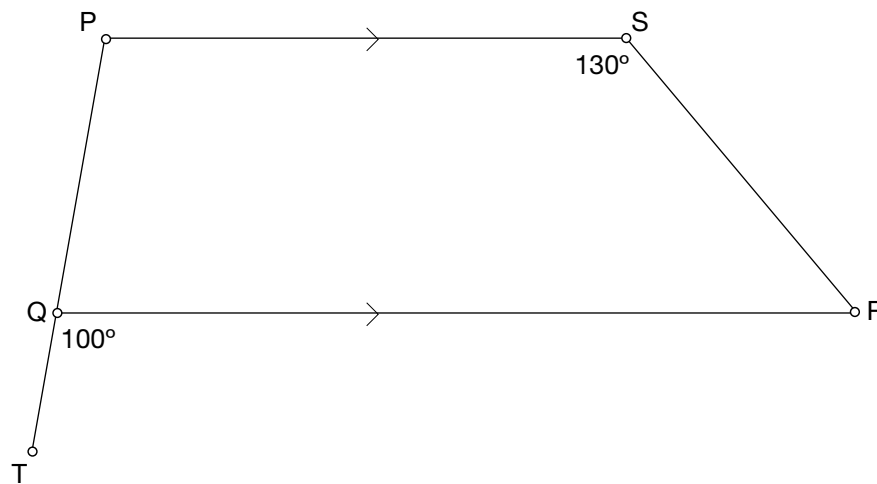
Determine which company Tenisha should use.
Include details about minutes of use in your explanation.

4. **Expand** and **simplify** the following expression:

$$2(x^2 - 2x + 1) - x(x - 3)$$

5. In quadrilateral PQRS, segment PS is parallel to segment QR. Some of the angles are known.

Explain how to use geometric properties to determine the measures of $\angle P$ and $\angle R$.



Angle Measure	Explanation
$\angle P =$	
$\angle R =$	

