1. Given the polygon below, which of the following polygons does **not** have the same perimeter?

A. 

B. 

C. 

D. 

2. Determine the perimeter of the following figure.

![Diagram of a figure composed of four squares, one in the top left, one in the top right, and two in the bottom right]

A. 7 square units  
B. 12 unit  
C. 14 units  
D. 21 units

3. Determine the area of the following figure.

![Diagram of a figure composed of four squares, one in the top right and three in the bottom right]

A. 5 square units  
B. 6 square units  
C. 10 units  
D. 15 units
4. Which figure below has a different area than the others?

A. 

B. 

C. 

D. 

5. Choose the dimensions of the rectangle that does not have a perimeter of 24.

A. 5 units x 7 units
B. 2 units x 12 units
C. 4 units x 8 units
D. 3 units x 9 units
6. Choose the dimensions of the rectangle that does not have an area of 36 square units.

   A. 9 units x 4 units
   B. 2 units x 18 units
   C. 6 units x 6 units
   D. 12 units x 6 units

7. Maria said there is more than one rectangle that can be drawn with an area of 12 square units.

   • Decide if Maria’s statement is true or false.
   • Give an example to support your answer.

Is Maria’s statement true or false? ______________

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
8. Mrs. Hill needs to have 36 square yards enclosed on her land in a rectangular shape. She knows there are many different ways she can enclose that number of yards as a rectangle, but she wants to use the least amount of fencing possible. She has asked you for help.

State the dimensions of the rectangle she should build.

Show work to support your answer using words, numbers, and/or pictures.

Dimensions ________________

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
9. Given the two rectangles below, compare their areas and perimeters. How are they the same and how are they different?

- Determine the area and the perimeter of each rectangle.
- Explain how the rectangles are the same and different.

<table>
<thead>
<tr>
<th>Rectangle A</th>
<th>Rectangle B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Area of Rectangle A: __________  Area of Rectangle B: __________
- Perimeter of Rectangle A: _______  Perimeter of Rectangle B: _______

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
10. John has limited amount of fencing that he can make a coral at his farm. He has 200 feet of fencing. He has asked you to help him decide how to build his coral. He needs as much area as he can get for his horses.

- Show him two different sizes of corals that he can make.
- Determine the area of each coral.
- Choose the coral you think would be best.
- Explain your choice using your understanding of area and perimeter.

<table>
<thead>
<tr>
<th>Coral Option #1</th>
<th>Coral Option #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area of Coral Option #1: __________</td>
<td>Area of Coral Option #2: __________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Best Choice for coral:</th>
</tr>
</thead>
</table>

Explain your choice.

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
3. Given the polygon below,

Which of the following polygons does not have the same perimeter?

A. 12 edges exposed

B. 12 edges exposed

C. 12 edges exposed

D. correct – 14 edges exposed
4. Determine the perimeter of the following figure.

```
  1  2  3
 4  5  6
 7  8  9
```

A. 7 square units attribute error – squares versus edges
B. 12 units perimeter error – didn’t include vertical edges in the empty area
C. **14 units** correct
D. 21 units perimeter error – included interior edges

3. Determine the area of the following figure.

```
  1  2
 3  4
```

A. **5 square units** correct
B. 6 square units didn’t exclude the missing corner square
C. 10 units counted the perimeter
D. 15 units counted the perimeter and interior edges
4. Which figure below has a different area than the others?

A. correct – 20 square units

B. 18 square units

C. 18 square units

D. 18 square units

11. Choose the dimensions of the rectangle that does not have a perimeter of 24?

A. 5 units x 7 units 24 units

B. **2 units x 12 units** correct – 28 units

C. 4 units x 8 units 24 units

D. 3 units x 9 units 24 units
12. Choose the dimensions of the rectangle that does not have an area of 36 square units.

A. 9 units x 4 units  36 square units
B. 2 units x 18 units  36 square units
C. 6 units x 6 units  36 square units

**E. 12 units x 6 units**  correct – 72 square units

7. Maria said there is more than one rectangle that can be drawn with an area of 12 square units.
   - Decide if Maria’s statement is true or false.
   - Give an example to support your answer.

**Scoring Guide FORMAT**
Learning Target: ME01 (Attributes and Dimensions) Demonstrate understanding of the concept of angle measurement; *demonstrate understanding of the concept of area.* (GLE 1.2.1)

2-point response: The student shows an understanding of the concept of area by doing **two** of the following:
- Writes True in the blank provided
- Draws and labels the dimensions of two of the following rectangles to support Maria’s statement: 1 unit X 12 units, 2 units X 6 units, or 3 units X 4 units.
- Include two of the following sets of dimensions as examples in written support of Maria’s statement: 1 unit X 12 units, 2 units X 6 units, or 3 units X 4 units.

Note: Response must indicate that Maria’s statement is true.

1-point response: The student shows partial understanding of the concept of area by doing **one** of the following:
- Writes True in the blank provided
- Draw and label the dimensions of two of the following rectangles to support Maria’s statement: 1 unit X 12 units, 2 units X 6 units, or 3 units X 4 units.
- Include two of the following sets of dimensions as examples in written support of Maria’s statement: 1 unit X 12 units, 2 units X 6 units, or 3 units X 4 units.

0-point response: The student shows very little or no understanding of how changes in dimensions can impact other measurable attributes.
8. Mrs. Hill needs to have 36 square yards enclosed on her land in a rectangular shape. She knows there are many different ways she can enclose that number of yards as a rectangle, but she wants to use the least amount of fencing possible. She has asked you for help.

- State the dimensions of the rectangle she should build.
- Show work to support your answer using words, numbers, and/or pictures.

Scoring Guide FORMAT
Learning Target: ME01 (Attributes and Dimensions) Demonstrate understanding of the concept of angle measurement; demonstrate understanding of the concept of area. (GLE 1.2.1)

2-point response: The student shows an understanding of the concept of area by doing the following:
- Writes 6X6 as the dimensions of the rectangle. (6yards×6yards)
- Shows work indicating that any other rectangle with the area of 36 square yards will have a larger perimeter, therefore using more fencing. For example 6 yards × 6 yards has a perimeter of 24 yards, whereas 1 yard × 36 yards has a perimeter of 74 yards.

1-point response: The student shows partial understanding of the concept of area by doing one of the following:
- Writes 6X6 as the dimensions of the rectangle. (6yards×6yards)
- Shows work indicating that any other rectangle with the area of 36 square yards will have a larger perimeter, therefore using more fencing. For example 6 yards × 6 yards has a perimeter of 24 yards, whereas 1 yard × 36 yards has a perimeter of 74 yards.

0-point response: The student shows very little or no understanding of the relationship between area and perimeter
9. Given the two rectangles below, compare their areas and perimeters. How are they the same and how are they different?

![Rectangle A](image1.png) ![Rectangle B](image2.png)

Determine the area and the perimeter of each rectangle.

Explain how the rectangles are the same and different.

**Scoring Guide FORMAT**

Learning Target: ME01 (Attributes and Dimensions) Demonstrate understanding of the concept of angle measurement; *demonstrate understanding of the concept of area*. (GLE 1.2.1)

**2-point response**: The student shows an understanding of the concept of area by doing the following:
- Writes 24 square units and 22 units for the area and perimeter of figure A respectively and writes 30 square units and 22 units for the area and perimeter of figure B respectively.
- Includes in a statement that the rectangles A and B have the same perimeter, but different areas.

**1-point response**: The student shows partial understanding of the concept of area by doing one of the following:
- Writes 24 square units and 22 units for the area and perimeter of figure A respectively and writes 30 square units and 22 units for the area and perimeter of figure B respectively.
- Includes in a statement that the rectangles A and B have the same perimeter, but different areas.

**0-point response**: The student shows very little or no understanding of how changes in dimensions can impact other measurable attributes.
10. John has limited amount of fencing that he can make a coral out of at his farm. He has 200 feet of fencing. He has asked you to help him decide how to build his coral. He needs as much area as he can get for his horses.

- Show him two different sizes of corals that he can make.
- Determine the area of each coral.
- Pick the one you think would be best
- Explain why using your understanding of area and perimeter

**Scoring Guide FORMAT**
Learning Target: ME01 (Attributes and Dimensions) Demonstrate understanding of the concept of angle measurement; demonstrate understanding of the concept of area. (GLE 1.2.1)

4-point response: The student shows understanding of the concept of area by doing the following:

- Draws and labels two different corals which can be any of the following dimensions: 10 units X 90 units, 20 units X 80 units, 30 units X 70 units, 40 units X 60 units, 50 units X 50 units … (Any rectangle with the correct perimeter will be accepted.)
- States the areas of each coral. (Ex. 10 X 90 has an area of 900 and 50 X 50 has an area of 2500.)
- Chooses the coral where the difference between the dimensions is the smallest. (Ex. 90-10=80 and 50-50=0, so I would choose the rectangle 50X50.)
- Explanation includes correct ideas about rectangles with fixed perimeters. (Rectangles with fixed perimeters may have many different areas and the area that is the largest is the one where the dimensions are the closest together.)

3-point response: The student does three of the four things required for 4 points.

2-point response: The student does two of the four things required for 4 points.

1-point response: The student does one of the four things required for 4 points.

0-point response: The student shows very little or no understanding of how changes in dimensions can impact other measurable attributes.