

Name _____

Date _____

Geometry Honors 2010 - 2011

Ms. Williams

Polygons and Quadrilaterals Practice Test

1) _____

2) _____

3) _____

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8) _____

9) _____

10) _____

Part I: out of 20 = _____

Part II: out of 6 = _____

Part III: out of 14 = _____

Part IV: out of 10 = _____

Total: out of 50 = _____

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Part I

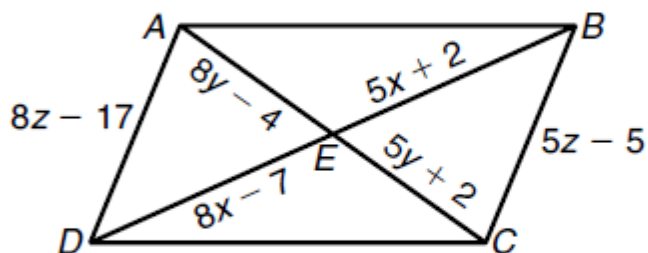
Answer all questions in this part. Each correct answer will receive 2 credits. No partial credit will be allowed. For each question, write on the separate answer sheet the numeral preceding the word or expression that best completes the statement or answers the question.

1. Which statement is NOT true about a regular 16-gon?
- ☐ (F) It is a convex polygon.
- ☐ (G) It has 16 congruent sides.
- ☐ (H) The sum of the interior angle measures is 2880° .
- ☐ (J) The sum of the exterior angles, one at each vertex, is 360° .

2. The exterior angles of a triangle measure $5x^\circ$, $(x + 61)^\circ$, and $(3x + 38)^\circ$. Which is the best classification of the triangle?

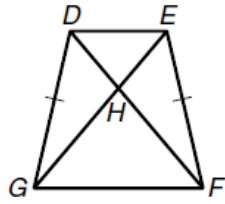
A acute **C** obtuse
B equiangular **D** right

3. $ABCD$ is a parallelogram. What is the perimeter of $\triangle AED$?



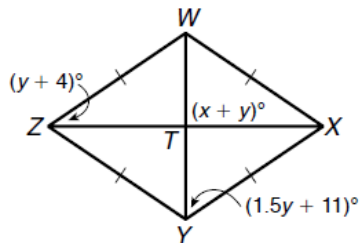
A 5.5 **C** 19
B 29 **D** 44

4. In isosceles trapezoid $DEFG$, $DF = x^2 - 3x$ and $EG = -5x + 15$. What is the value of x ?



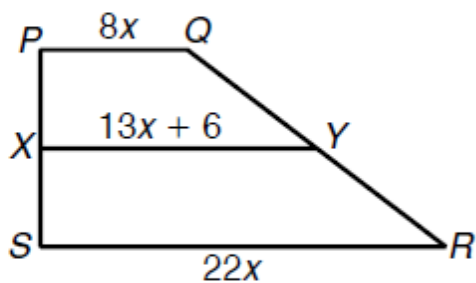
- | | |
|-------------|------------|
| A -5 | C 3 |
| B -3 | D 5 |

5. In $\square WXYZ$, what is the value of x ?



- | | |
|-------------|-------------------|
| F 30 | H 60 |
| G 45 | J Not here |

6. In trapezoid $PQRS$, if $\overline{YX}$ is the midsegment, what is the value of x ?



F 3

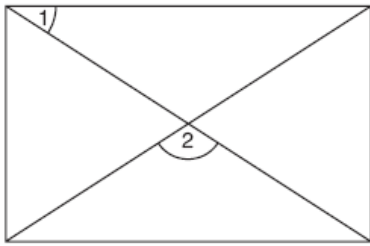
H 12

G 8

J 24

7. How many sides does a polygon with 65 diagonals have?

8. As shown in the accompanying diagram, a *rectangular* gate has two diagonal supports. If $m\angle 1 = 42$, what is $m\angle 2$?



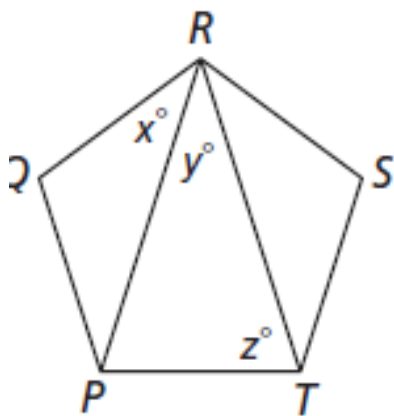
9. Find the perimeter of a rhombus with diagonals 16 and 12.
10. The sum of the interior angles of an animal pen is 900° . How many sides does the pen have?

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Part II

Answer all questions in this part. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit.

11. Polygon $PQRST$ is a regular pentagon. Find the values of x , y , and z .



$x =$ _____

$y =$ _____

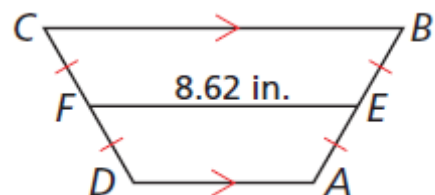
$z =$ _____

12. The perimeter of a square is 56. Express the length of a diagonal of the square in simplest radical form.

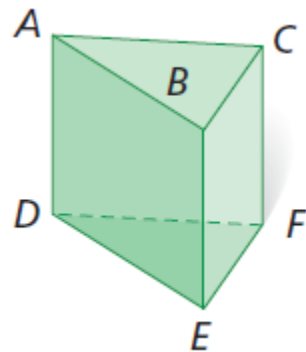
Part III

Answer all questions in this part. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit.

13. The perimeter of isosceles trapezoid $ABCD$ is 27.4 inches. If $BC = 2(AB)$, find AD , AB , BC , and CD .



14. **Given:** $\overline{AC} \cong \overline{DF}$, $\overline{AB} \cong \overline{DE}$, $\overline{AB} \perp \overline{BC}$, $\overline{DE} \perp \overline{EF}$,
 $\overline{BE} \perp \overline{EF}$, $\overline{BC} \parallel \overline{EF}$
Prove: $EBCF$ is a rectangle.



Part IV

Answer all questions in this part. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit.

15. *Given:* $ABCD$ is a square.

$$\overline{AE} \cong \overline{AB}.$$

$$\overline{FE} \perp \overline{AC}.$$

Prove: a. $\overline{CE} \cong \overline{EF}.$

$$b. \overline{FE} \cong \overline{FB}.$$

