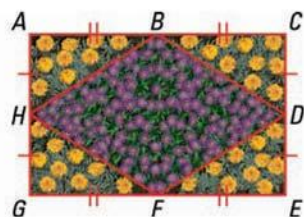




Lessons 11.1–11.3

1. **MULTI-STEP PROBLEM** The diagram below represents a rectangular flower bed. In the diagram, $AG = 9.5$ feet and $GE = 15$ feet.

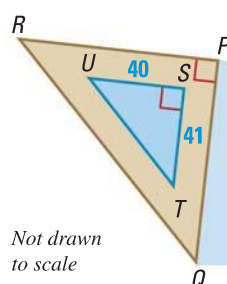


- Explain how you know that $BDFH$ is a rhombus.
 - Find the area of rectangle $ACEG$ and the area of rhombus $BDFH$.
 - You want to plant asters inside rhombus $BDFH$ and marigolds in the other parts of the flower bed. It costs about \$.30 per square foot to plant marigolds and about \$.40 per square foot to plant asters. How much will you spend on flowers?
2. **OPEN-ENDED** A polygon has an area of 48 square meters and a height of 8 meters. Draw three different triangles that fit this description and three different parallelograms. *Explain* your thinking.
3. **EXTENDED RESPONSE** You are tiling a 12 foot by 21 foot rectangular floor. Prices are shown below for two sizes of square tiles.



- How many small tiles would you need for the floor? How many large tiles?
- Find the cost of buying large tiles for the floor and the cost of buying small tiles for the floor. Which tile should you use if you want to spend as little as possible?
- Compare the side lengths, the areas, and the costs of the two tiles. Is the cost per tile based on side length or on area? *Explain*.

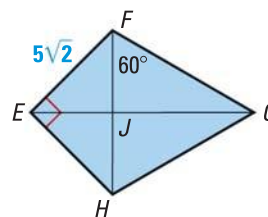
4. **SHORT RESPONSE** What happens to the area of a rhombus if you double the length of each diagonal? if you triple the length of each diagonal? *Explain* what happens to the area of a rhombus if each diagonal is multiplied by the same number n .
5. **MULTI-STEP PROBLEM** The pool shown is a right triangle with legs of length 40 feet and 41 feet. The path around the pool is 40 inches wide.



Not drawn to scale



- Find the area of $\triangle STU$.
 - In the diagram, $\triangle PQR \sim \triangle STU$, and the scale factor of the two triangles is $1.3 : 1$. Find the perimeter of $\triangle PQR$.
 - Find the area of $\triangle PQR$. Then find the area of the path around the pool.
6. **GRIDDED ANSWER** In trapezoid $ABCD$, $\overline{AB} \parallel \overline{CD}$, $m\angle D = 90^\circ$, $AD = 5$ inches, and $CD = 3 \cdot AB$. The area of trapezoid $ABCD$ is 1250 square inches. Find the length (in inches) of \overline{CD} .
7. **EXTENDED RESPONSE** In the diagram below, $\triangle EFH$ is an isosceles right triangle, and $\triangle FGH$ is an equilateral triangle.



- Find FH . *Explain* your reasoning.
- Find EG . *Explain* your reasoning.
- Find the area of $EFGH$.