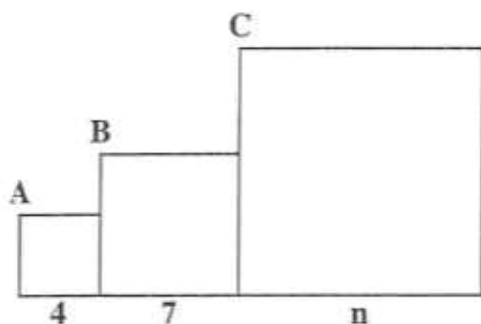


Problem Set #25

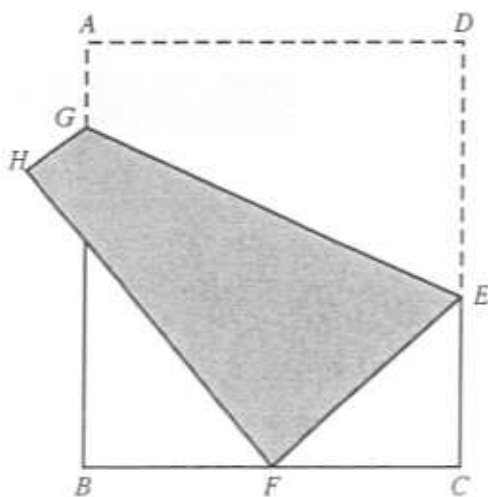
First & Last Name: _____ Period: _____ Points: ___ / 10

Must Do

- [2 points] Consider the linear equation $y = 3.62(x - 1.35) + 2.74$.
 - What is the slope of this line?
 - What is the value of y when $x = 1.35$?
 - This equation is written in *point-slope form*. Explain the terminology.
 - Use your calculator (or computer app) to graph this line.
 - Find an equation for the line through $(4.23, -2.58)$ that is parallel to this line.
- [2 points] A triangle has $K = (3, 1)$, $L = (-5, -3)$, and $M = (-8, 3)$ for its vertices. Verify that the lengths of the sides of triangle KLM fit the Pythagorean equation $a^2 + b^2 = c^2$.
- [1 point] The perimeter of an isosceles right triangle is 24 cm. How long are its sides? [Hint: Draw a diagram and don't forget the Pythagorean Theorem].
- [1 point] Rewrite the equation $3x - 5y = 30$ in the form $ax + by = 1$. Are there lines whose equations cannot be rewritten in this form?
- [2 points] Three squares are placed next to each other as shown below. The vertices A , B , and C are collinear. Find the dimension n .



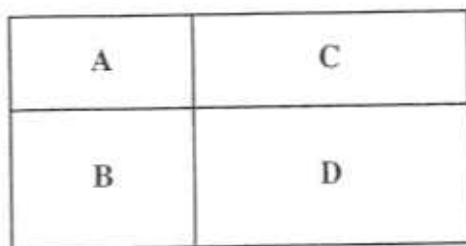
- [3 points] The dimensions of rectangular piece of paper $ABCD$ are $AB = 10$ and $BC = 9$. It is folded so that corner D is matched with a point F on edge BC . Given that length $DE = 6$, find EF , EC , and FC .



7. [3 points] The sides of the triangle at right are formed by the graphs of $3x + 2y = 1$, $y = x - 2$, and $-4x + 9y = 22$. Is the triangle isosceles? How do you know?
8. [2 points] Find a way to show that points $A = (-4, -1)$, $B = (4, 3)$, and $C = (8, 5)$ are collinear.

Challenge

9. [10 points] A man owns a rectangular piece of land. The land is divided into four rectangular pieces, known as Region A, Region B, Region C, and Region D (see the figure below). One day his daughter, Nancy, asked him, what is the area of our land? The father replied: I will only tell you that the area of Region B is 200 ft^2 larger than the area of Region A; the area of Region C is 400 ft^2 larger than the area of Region B; and the area of Region D is 800 ft^2 larger than area of Region C. What answer to her question will Nancy derive from her father's statement?



Self-Assessment

| Problem | Your Points | Got help? (circle) | Difficulty (circle) 1 = Really Easy! 5 = Really Hard! | Teacher Points | Teacher Comments |
|---------------|-------------|----------------------------------|-------------------------------------------------------------|----------------|------------------|
| 1 | | Yes / No | 1 2 3 4 5 | | |
| 2 | | Yes / No | 1 2 3 4 5 | | |
| 3 | | Yes / No | 1 2 3 4 5 | | |
| 4 | | Yes / No | 1 2 3 4 5 | | |
| 5 | | Yes / No | 1 2 3 4 5 | | |
| 6 | | Yes / No | 1 2 3 4 5 | | |
| 7 | | Yes / No | 1 2 3 4 5 | | |
| 8 | | Yes / No | 1 2 3 4 5 | | |
| 9 | | Yes / No | 1 2 3 4 5 | | |
| Self/Assess | | <i>1 point if fully complete</i> | | | |
| Total: | | | Total: | | |