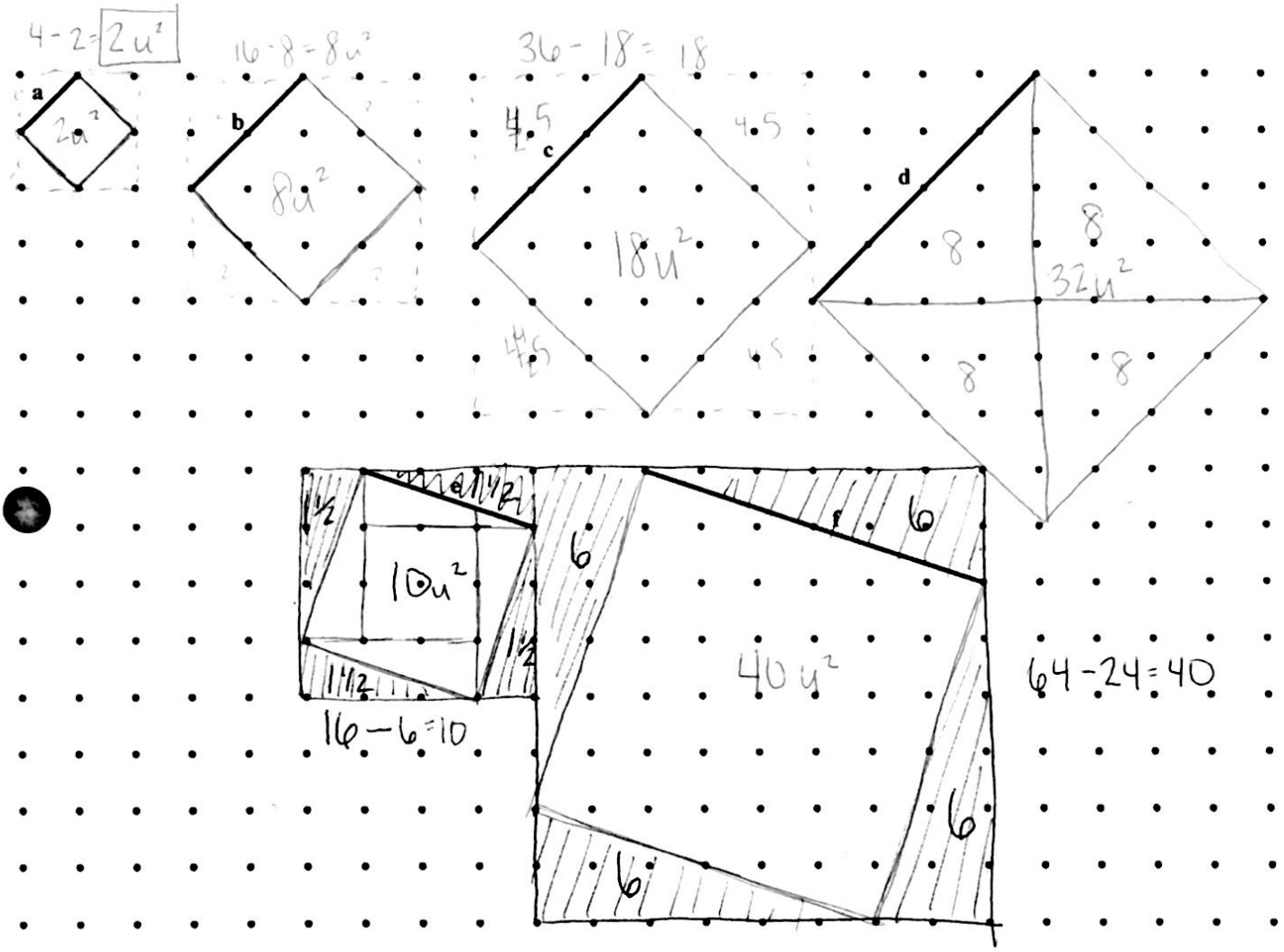
Name:_____ Date:_____ Per._____

U7 CWK #2: *Squares, Squares, and More Squares Cont.*

In the previous sections, we have learned how to simplify square roots of perfect squares. For example, we know that $\sqrt{36} = 6$. What about the square roots of non-perfect squares? How do we know that they are in simplest form? For example, is $\sqrt{5}$ in simplest form? How about $\sqrt{8}$? $\sqrt{147}$? Let's take a look.

1. Determine the lengths of line segments a through f without the use of a ruler. Write your answers in the space provided below each grid.



a. $\sqrt{2}$

b. $\sqrt{8}$

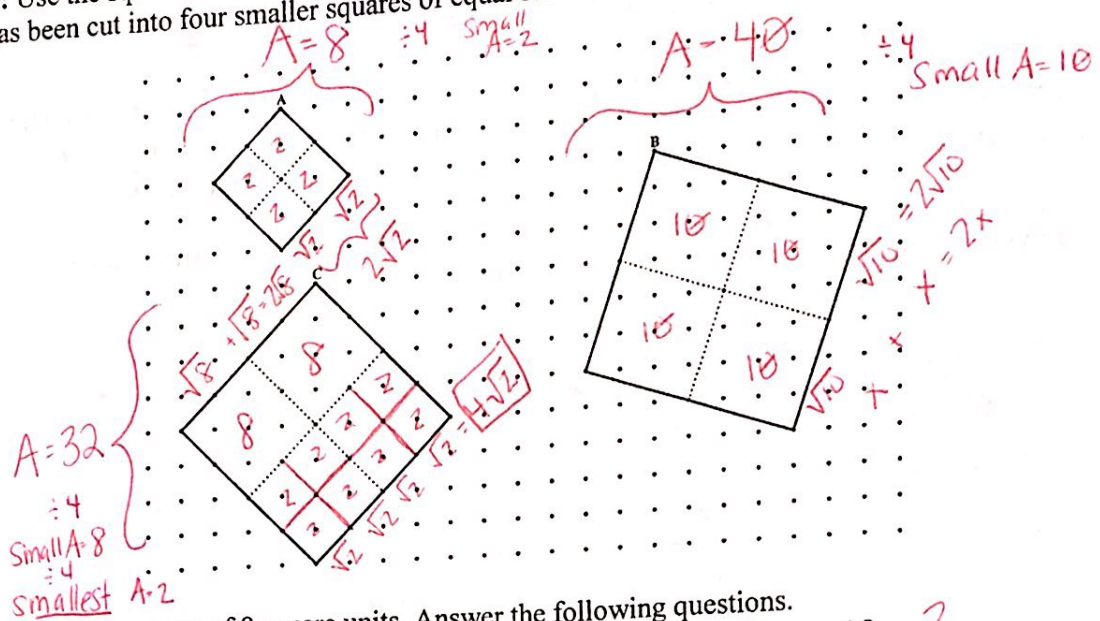
c. $\sqrt{18}$

d. $\sqrt{32}$

e. $\sqrt{10}$

f. $\sqrt{42}$

Directions: Use the squares on the grid below to answer the questions that follow. Each of the large squares A, B, and C has been cut into four smaller squares of equal size.



2. Square A has an area of 8 square units. Answer the following questions.
   a. What is the area of one of the smaller squares that makes up Square A? 2
   b. What is the side length of one of the smaller squares that makes up Square A? $\sqrt{2}$
   c. What is the side length of the large square A (written 2 different ways)? $\sqrt{8} = 2\sqrt{2}$

3. Square B has an area of 40 square units. Answer the following questions.
   a. What is the area of one of the smaller squares that makes up Square B? 10
   b. What is the side length of one of the smaller squares that makes up Square B? $\sqrt{10}$
   c. What is the side length of the large square B (written two different ways)? $\sqrt{40} = 2\sqrt{10}$

4. Square C has an area of 32 square units. Answer the following questions.
   a. What is the area of one of the smaller squares that makes up Square C? 8
   b. What is the side length of one of the smaller squares that makes up Square C? $\sqrt{8}$
   c. What is the side length of the large square (written *three* different ways)? $\sqrt{32} = 2\sqrt{8} = 4\sqrt{2}$