Constructing a Square Ancient Indian Fire Altar Activity: Instructor Notes

Materials for each student or group of students (if working in groups)

- 3 sheets of 8.5 by 11 inch paper for cutting out "bricks"
- Scissors

Skills Required

- Finding a least common multiple.
- Writing algebraic equations.
- Solving a linear system of two equations in two unknowns.
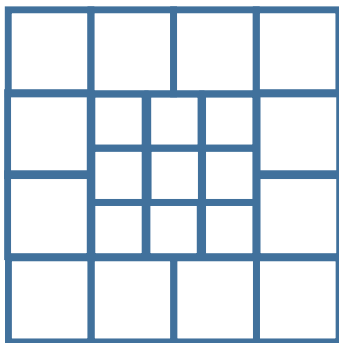
Solutions

1. 12   2. 2   3. 3   4. 4   5. $a + b = 21$

6. $b/16$ 7. $\dfrac{a}{36} + \dfrac{b}{16} = 1$ or $4a + 9b = 144$

8. $a = 9, b = 12$

9. Solve the linear system $\begin{cases} c + d = 21 \\ \dfrac{c}{9} + \dfrac{d}{36} = 1 \end{cases}$ or $\begin{cases} c + d = 21 \\ 4c + d = 36 \end{cases}$. The solution is $c = 5, d = 16$.

10. One solution is

11. One solution is