Names (pair) _____ Date _____

Word Problems with Quadratic Equations

Remember

1. Name the unknown and say what it means (with its unit). **2.** Write an equation. **3.** Solve it. **4.** Check whether **each** solution makes sense in the problem: lengths, times and numbers of people are not negative. **5.** Answer in a sentence.

1 IN PAIRS Share the problems: **student A** solves the first two and **student B** the other two. Then explain your solution to your partner, who checks the equation and the answer.

student A **a)** The sum of the squares of two consecutive whole numbers is 85. What are the numbers?

student A **b)** A lawn is 20 m long and 15 m wide. Two perpendicular paths of the same width cross it, parallel to its sides. 204 m² of grass is left. How wide are the paths?

student B **c)** A ball is thrown upwards. After t seconds its height is $25t - 5t^2$ metres. When is the ball at a height of 30 m? Why are there two answers?

student B **d)** At a meeting, everyone shook hands with everyone else exactly once. There were 45 handshakes. How many people were at the meeting?

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2 IN PAIRS A hall has 384 seats. Each row has 8 more seats than there are rows. How many rows are there, and how many seats in each row?

3 IN PAIRS A class collected €240 for a trip. If 4 more students had gone, each would have paid €5 less. How many students went on the trip?

4 IN PAIRS Make up your own word problem that leads to $x^2 + 2x = 48$. Swap problems with another pair and solve theirs.

★ ON YOUR OWN **Exit card.** The product of two consecutive even numbers is 168. What are the numbers? Find all the solutions.