Difference of Squares

CKSTEM Math Problem Solving · Grades 5–8

Try each problem on your own first — then watch the solution videos.

★ Difference of Squares Identity

Compute 51 squared minus 49 squared without a calculator.

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LO Border = Sum of Sides

A 4-by-4 quilt of patches grows by one extra row and one extra column, becoming a 5-by-5 quilt. How many new patches were added?

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L1 Two Squares, One Multiplication

A bigger quilt is 11-by-11 patches. A smaller quilt is 9-by-9 patches. How many more patches does the bigger quilt use?

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L2 Sum Times Difference

Two square quilt sides add up to 30 patches. The bigger side is 6 patches longer than the smaller side. How many more patches does the bigger quilt use than the smaller one?

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L3 Reverse the Identity

A bigger quilt uses 192 more patches than a smaller quilt. The bigger side is 4 patches longer than the smaller side. What is the bigger side length?

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L4 Factor Pairs of the Difference

A community centre wants two square quilt sizes so the bigger quilt uses exactly 693 more patches than the smaller. The bigger side must be less than 50 patches. How many different pairs of whole-number side lengths are possible?

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L5 Factor Pairs, Bounded Window

Two square quilts have side lengths whose area difference is exactly 3465 patches. The bigger side must be less than 100 patches. The smaller side must be at least 10 patches. How many different pairs of whole-number side lengths are possible?

WORK IT OUT HERE