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Quadratic Word Problems Worksheets

1) The difference of squares of any two numbers is 363. If the square of the larger number is 4 times the square of the smaller number, find the difference between the two numbers.

2) Natalie gets pocket money from her mother and is planning to buy a dress for her annual day celebrations in school. Had she got $10 more pocket money from her mom, the amount would have been 9 times the square of the money she has now. How much money does she have now?

3) Ryan drives his sports car for a distance of 63 miles and then travels a distance of 72 miles at an average speed of 6 miles/hour more than its original speed. If it takes 3 hours to complete the total journey, what is the original average speed of the car?

4) There is a natural number whose square when increased by 76 is 36 more than 8 times the number itself. Find the number.

5) If Tyler were 9 years younger than what he actually is, then the square of his age would have been 1 more than three times his actual age. What is his age now?

6) Find the sum of the roots for the quadratic equation $z^2 + (z+2)^2 = 290$.

7) Find the value of k for which the quadratic equation $2x^2 - kx + 1 = 0$ has equal roots.

8) Evelyn is thinking of constructing a rectangular shaped swimming pool in the plot next to her house such that it is surrounded by grass as given in the figure below. The dimensions of the plot is 50 ft × 40 ft, and the area of the grass is 1184 ft^2. Find the dimensions of the pool.

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Why choose Cuemath?

"Cuemath is a valuable addition to our family. We love solving puzzle cards. My daughter is now visualizing maths and solving problems effectively!"

- Gary Schwartz

"Cuemath is great because my son has a one-on-one interaction with the teacher. The instructor has developed his confidence and I can see progress in his work. One-on-one interaction is perfect and a great bonus."

- Kirk Riley

"I appreciate the effort that miss Nitya puts in to help my daughter understand the best methods and to explain why she got a problem incorrect. She is extremely patient and generous with Miranda."

- Barbara Cabrera

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ANSWERS

1)	49
2)	$\frac{-23}{16}$
3)	256
4)	576
5)	81
6)	$\frac{13+\sqrt{153}}{2}, \frac{13-\sqrt{153}}{2}$

7)	$-4, -10$
8)	$-8, 4$

FUN FACT

1. The general form of a quadratic equation is given as,
   $$ax^2 + bx + c = 0$$
2. a, b, c are real numbers, where b and c can have any value but $a \neq 0$.
3. The degree of a quadratic polynomial is always 2.