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Solving quadratic equations by completing square Worksheet**Questions**

1. Solve by completing the square.

$$x^2 - 9x + 20 = 0.$$

2. Solve by completing the square.

$$x^2 + 11x + 28 = 0.$$

3. Solve $2p^2 + 22p + 36 = 0$ by completing the square.

4. To solve $x^2 + x + 1 = 0$ by completing the square, which number should be added on both sides?

5. Fill in the following blanks as instructed to solve

$5n^2 + 10n + 20 = 0$ by completing the square.

Step 1: Divide both sides by 5 to make the coefficient of n^2 to be

1. Then we get _____

Step 2: Subtract/add the constant term on both sides to eliminate it from the left side. Then we get _____

Step 3: Find half of coefficient of n and square it. The resultant number is _____.

Step 4: Add the number from the above step on both sides of the equation in Step 2. Then we get _____

Step 5: Factorize the left side part of the above equation. Notice that you get the number from step 3 just after n when you factorize. Then the result is _____

Step 6: Take the square root on both sides. Then we get _____

Step 7: Solve for n . Then $n =$ _____ (or) _____.

6. Solve $m^2 + 11m + 30 = 0$ by completing the square..

7. The length of a park is 5 ft less than twice its width. Find the dimensions of the park if its area is 250 square feet.

Hint: Get a quadratic equation that represents this situation and solve it by completing the square.



8. Factor and then solve by completing the square.

$$3x^3 - 16x^2 + 5x = 0$$

9. Find two values of x in terms of y by solving

$$x^2 + 10xy + 16y^2 = 0.$$

10. Can we help Amelia to answer the following?

If twice the difference of a number and 6 is equal to -2 times its square, then find the number(s).



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"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

Questions	Answers
1.	$x = 4; x = 5$
2.	$x = -7; x = -4$
3.	$x = -2; x = -9$
4.	$\frac{1}{4}$
5.	<p>Step 1: $n^2 + 2n + 4 = 0$</p> <p>Step 2: $n^2 + 2n = -4$</p> <p>Step 3: $\left(\frac{2}{2}\right)^2 = 1$</p> <p>Step 4: $n^2 + 2n + 1 = -3$</p> <p>Step 5: $(n + 1)^2 = -3$</p> <p>Step 6: $n + 1 = \pm i\sqrt{3}$</p> <p>Step 7: $-1 + i\sqrt{3}; -1 - i\sqrt{3}$</p>
6.	$m = -5; m = -6$
7.	12.5 ft x 20 ft
8.	$x = 0; x = \frac{1}{3}; x = 5$
9.	$x = -2y; x = -8y$
10.	-3, 2