IS YOUR SQUARE COMPLETE? WORKSHEET KEY

State whether each trinomial is a perfect square.

1. $x^2 + 8x + 7$ ➔ **NO**

2. $x^2 - 8x + 16$ ➔ **YES**

3. $x^2 + 4x + 3$ ➔ **NO**

4. $x^2 + 12x + 27$ ➔ **NO**

5. $x^2 - 10x + 25$ ➔ **YES**

6. $x^2 - 13x + \dfrac{169}{4}$ ➔ **YES**

Find the value of "c" that makes each trinomial a perfect square.

7. $x^2 + 8x + c$ ➔ c = 16

Step 1➔Find one-half of 8. **Step 2➔ Square the result of "Step 1".** **Step 2➔ Add the result of "Step 2" to "x^2 + 8x.**	$\dfrac{8}{2} = 4$ **4^2 = 16** **x^2 + 8x + 16**

8. $x^2 - 6x + c$ ➔ c = 9

Step 1➔Find one-half of -6. **Step 2➔ Square the result of "Step 1".** **Step 2➔ Add the result of "Step 2" to "x^2 - 6x.**	$\dfrac{-6}{2} = -3$ **(-3)^2 = 9** **x^2 - 6x + 9**

9. $x^2 - 7x + c$

Step 1➔Find one-half of -7. **Step 2➔ Square the result of "Step 1".** **Step 2➔ Add the result of "Step 2" to "x^2 - 7x.**	$\dfrac{-7}{2}$ $(\dfrac{-7}{2})^2 = \dfrac{49}{4}$ **x^2 - 7x + $\dfrac{49}{4}$**

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Solve each equation by completing the square.

DAY 10

10. $x^2 + 4x + 3 = 0$

$x^2 + 4x = -3$
$x^2 + 4x + (2)^2 = -3 + (2)^2$
$(x + 2)^2 = 1$
$x + 2 = \pm 1$
$x = -1 \quad \text{or } x = -3$

11. $x^2 - 4x = 2$

$x^2 - 4x + (2)^2 = 2 + (2)^2$
$(x - 2)^2 = 6$
$x - 2 = \pm\sqrt{6}$
$x = 2 \pm\sqrt{6}$

12. $x^2 + 14x - 10 = 5$

$x^2 + 14x = 5 + 10$
$x^2 + 14x + (7)^2 = 15 + (7)^2$
$(x + 7)^2 = 64$
$x + 7 = \pm 8$
$x = 1 \quad \text{or} \quad x = -15$

13. $4x^2 - 20x + 25 = 0$

$4x^2 - 20x = -25$
$4(x^2 - 5x) = -25$
$4[x^2 - 5x + (\frac{5}{2})^2] = -25 + 25$
$4(x - \frac{5}{2})^2 = 0$
$(x - \frac{5}{2})^2 = 0$
$x = \frac{5}{2}$

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