Completing the Square

Name:
Date: Per:

Steps for Completing the Square:

1. Is your constant term on the right side of the = side? If not, move it!
2. Is the coefficient of x^2 '1'? If not, divide EVERY term by the coefficient.
3. Find the missing term (take half of *b*, then square it).
4. Add the result from step 3 to BOTH sides of your equation.
5. Take the square root of both sides. (Don't forget to consider both the positive and negative square root)
6. Get x by itself and simplify.

Find the value of *c* such that each expression is a perfect square trinomial.

1) $x^2 - 14x + c$

2) $x^2 - \frac{2}{9}x + c$

3) $x^2 - \frac{4}{9}x + c$

4) $x^2 - \frac{2}{6}x + c$

Solve each equation by completing the square.

5) $x^2 - 4x = 5$

6) $2x^2 = 3x + 9$

7) $x^2 - 6x = 10$

8) $x^2 - 3x = 18$

9) $x^2 - 6x = 0$

10) $x^2 - 7x = 0$

11) $x^2 + 11x + 10 = 0$

12) $x^2 - 8x = 9$

13) $x^2 - 2x = 120$

14) $2x^2 - 3x - 2 = 0$

15) $3x^2 + 17x - 6 = 0$

16) $3x^2 - 4x + 1 = 0$

17) $6x^2 - 2x = 28$

18) $4x^2 = -2x + 12$