Completing the Square

Directions: Find the value of *c* that completes the square.

1) $x^2 + 6x + c$

2) $x^2 - 10x + c$

3) $x^2 - 7x + c$

4) $x^2 - \frac{1}{2}x + c$

5) $x^2 + 40x + c$

6) $x^2 + 13x + c$

Directions: Solve by completing the square.

7) $x^2 + 14x - 51 = 0$

8) $x^2 - 12x + 11 = 0$

9) $x^2 + 14x - 38 = 0$

10) $x^2 - 10x - 26 = 0$

11) $x^2 - 4x - 16 = 0$

12) $x^2 + 2x - 20 = 0$

Directions: Solve by completing the square.

13) $x^2 = 18x + 40$

14) $x^2 - 4x - 91 = 7$

15) $x^2 - 6x = 91$

16) $x^2 + 4x + 26 = 40$

Directions: Solve each problem.

17) Bob is looking for the zeros in the equation $h(x) = x^2 + 6x + 7$ as shown. Find his mistake.

$$x^2 + 6x + 7 = 0$$
$$x^2 + 6x = -7$$
$$x^2 + 6x + 9 = -7 + 9$$
$$(x + 3)^2 = 2$$
$$x + 3 = \sqrt{2}$$
$$x = -3 + \sqrt{2}$$