Practice

1.

$c = \left(\frac{b}{2}\right)^2 = \left(\frac{16}{2}\right)^2 = 8^2 = 64$

64

2.

$c = \left(\frac{b}{2}\right)^2 = \left(\frac{-24}{2}\right)^2 = (-12)^2 = 144$

144

3.

$c = \left(\frac{b}{2}\right)^2 = \left(\frac{6}{2}\right)^2 = 3^2 = 9$

9

4.

$c = \left(\frac{b}{2}\right)^2 = \left(\frac{7}{2}\right)^2 = \frac{7^2}{2^2} = \frac{49}{4}$

$\frac{49}{4}$

5.

$c = \left(\frac{b}{2}\right)^2 = \left(\frac{-11}{2}\right)^2 = \frac{-11^2}{2^2} = \frac{121}{4}$

$\frac{121}{4}$

6.

$c = \left(\frac{b}{2}\right)^2 = \left(\frac{5}{2*2}\right)^2 = \frac{5^2}{4^2} = \frac{25}{16}$

$\frac{25}{16}$

7.

$x^2 - 6x + \_\_\_ = -8 + \_\_\_$

$x^2 - 6x + (\frac{-6}{2})^2 = -8 + (\frac{-6}{2})^2$

$x^2 - 6x + 9 = -8 + 9$

$(x-3)^2 = 1$

$\sqrt{(x-3)^2} = \pm\sqrt{1}$

$x - 3 = \pm 1$

$x = 3 \pm 1$

$x = 3 + 1 = 4$

$x = 3 - 1 = 2$

$x = 4, 2$

8.

$x^2 - 10x + \_\_\_ = -14 + \_\_\_$

$x^2 - 10x + \left(\frac{-10}{2}\right)^2 = -14 + \left(\frac{-10}{2}\right)^2$

$x^2 - 10x + (-5)^2 = -14 + (-5)^2$

$(x-5)^2 = -14 + 25$

$(x-5)^2 = 11$

$\sqrt{(x-5)^2 = 11}$

$x - 5 = \pm\sqrt{11}$

$x = 5 \pm \sqrt{11}$

9.

$x^2 + 6x + \_\_\_\_ = 22 + \_\_\_\_$

$x^2 + 6x + (\frac{6}{2})^2 = 22 + (\frac{6}{2})^2$

$x^2 + 6x + (3)^2 = 22 + (3)^2$

$(x+3)^2 = 22 + 9$

$(x+3)^2 = 31$

$\sqrt{(x+3)^2 = 31}$

$x + 3 = \pm\sqrt{31}$

$x = -3 \pm \sqrt{31}$

10.

$x^2 + 20x + \_\_\_\_ = -94 + \_\_\_\_$

$x^2 + 20x + (\frac{20}{2})^2 = -94 + (\frac{20}{2})^2$

$x^2 + 20x + (10)^2 = -94 + (10)^2$

$(x + 10)^2 = -94 + 100$

$(x + 10)^2 = 6$

$\sqrt{(x + 10)^2 = 6}$

$x + 10 = \pm\sqrt{6}$

$x = -10 \pm \sqrt{6}$

11.

$x^2 - 2x + \_\_\_\_ = 38 + \_\_\_\_$

$x^2 - 2x + (\frac{-2}{2})^2 = 38 + (\frac{-2}{2})^2$

$x^2 - 2x + (-1)^2 = 38 + (-1)^2$

$(x - 1)^2 = 38 + 1$

$(x - 1)^2 = 39$

$\sqrt{(x - 1)^2 = 39}$

$x - 1 = \pm\sqrt{39}$

$x = 1 \pm \sqrt{39}$

12.

$x^2 + 5x + \_\_\_\_ = 9 + \_\_\_\_$

$x^2 + 5x + (\frac{5}{2})^2 = 9 + (\frac{5}{2})^2$

$x^2 + 5x + (\frac{5}{2})^2 = 9 + \frac{25}{4}$

$(x + \frac{5}{2})^2 = \frac{36}{4} + \frac{25}{4}$

$(x + \frac{5}{2})^2 = \frac{61}{4}$

$\sqrt{(x + \frac{5}{2})^2 = \frac{61}{4}}$

$x + \frac{5}{2} = \pm\frac{\sqrt{61}}{2}$

$x = -\frac{5}{2} \pm \frac{\sqrt{61}}{2}$