What is the solution to $p^2 + 16p - 22 = 0$

Solution:

Use the quadratic formula

$$p = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

a = 1, b = 16, c = - 22

$$p = \frac{-16 \pm \sqrt{256 + 4 * 1 * 22}}{2} = -8 \pm \sqrt{86}$$

$p = 1.27$ and $p = -17.27$

$$p^2 + 16p - 22 = p^2 + 16p + 64 - 64 - 22 = (p + 8)^2 - 86 = 0$$

$(p + 8) = \sqrt{86}$ and $(p + 8) = -\sqrt{86}$

$p = -8 + \sqrt{86}$ and $p = -8 - \sqrt{86}$

$p = 1.27$ and $p = -17.27$

Answer: $p = 1.27$ and $p = -17.27$