$x^2 + (2+2\imath)x - (12-18\imath) = 0$
$D = (2+2\imath)^2 - 4(-(12-18\imath))$
$D = 4 + 8\imath + 4\imath^2 + 4(12-18\imath)$
$D = \cancel{4} + 8\imath \cancel{-4} + 48 - 72\imath$
$D = 48 - 64\imath$
$z = \sqrt{D}| \uparrow^2$
$z \in \mathbb{C}; z = a + b\imath$
$z^2 = D = 48 - 64\imath$
$a^2 - b^2 + 2ab\imath = 48 - 64\imath$

$$\left| \begin{array}{lcl} a^2 - b^2 & = & 48 \\ 2ab\imath & = & -64\imath \end{array} \right.$$
$$\left| \begin{array}{lcl} a^2 - b^2 & = & 48 \\ a & = & \frac{-32}{b} \end{array} \right.$$

$a^2 - b^2 = 48$
$\left(\frac{-32}{b}\right)^2 - b^2 = 48$
$b^2 - \left(\frac{-32}{b}\right)^2 + 48 = 0| \times b^2$
$b^4 + 48b^2 - 32^2 + = 0$
$y = b^2,\ y \geq 0$
$y^2 + 48y - 32^2 = 0$
$D_y = 48^2 - 4(-32^2)$
$D_y = 48^2 + 4 \times 32^2$
$D_y = 2^2 \times 3^2 \times 8^2 + 2^2 \times 4^2 \times 8^2$
$D_y = 2^2 8^2 (3^2 + 4^2) = 2^2 8^2 5^2$
$\sqrt{D_y} = 2 \times 5 \times 8 = 80$
$y_1 = \frac{\cancel{-48+80}}{2} = -24 + 40 = 16 > 0$
$y_2 = \frac{\cancel{-48+80}}{2} = -24 - 40 = -64 \leq 0$

$b^2 = 16, b = \pm 4$
$a = \frac{-32}{\pm 4}, a = \mp 8$
$z = \mp 8 \pm 4\imath$
$x_1 = \frac{-(2+2\imath)+(-8+4\imath)}{2} = \frac{-2-2\imath-8+4\imath}{2} = \frac{\cancel{-10+2\imath}}{\cancel{2}} = -5 + \imath$
$x_2 = \frac{-(2+2\imath)-(-8+4\imath)}{2} = \frac{-2-2\imath+8-4\imath}{2} = \frac{\cancel{-6-6\imath}}{\cancel{2}} = 3 - 3\imath$
$x_3 = \frac{-(2+2\imath)+(8-4\imath)}{2} = \frac{-2-2\imath+8-4\imath}{2} = \frac{\cancel{-6-6\imath}}{\cancel{2}} = 3 - 3\imath$
$x_4 = \frac{-(2+2\imath)-(8-4\imath)}{2} = \frac{-2-2\imath-8+4\imath}{2} = \frac{\cancel{-10+2\imath}}{\cancel{2}} = -5 + \imath$
$x_1 = x_4, x_2 = x_3$