Section 4.4 - Complex Numbers

Simplify.

11) $\sqrt{-8}$

$i\sqrt{8} = 2i\sqrt{2}$

12) (2 - i) + (13 + 4i)

$\boxed{15+3i}$

13) (6 + 2i) - (4 - 3i)

$\boxed{2+5i}$

14) (6 + 5i)(3 - 2i)

$\boxed{28+3i}$

15) (-10 - 4i)(3 - 2i)

$\boxed{-38+8i}$

Section 4.5 - Completing the Square

Find the value of c that makes each trinomial a perfect square. Then, write the trinomial as a perfect square.

16) $x^2 + 18x + c$

$c = 81$

$(x+9)^2$

19) $x^2 - 4x + c$

$c = 4$

$(c-2)^2$

Solve each equation by completing the square.

20) $x^2 - 6x - 7 = 0$

$\boxed{x = 7 \quad x = -1}$

21) $2x^2 + 3x - 5 = 0$

$\boxed{x = 1 \quad x = 2.5}$

Section 4.6 - The Quadratic Formula and the Discriminant

For #22-24, Find the value of the discriminant, describe the number and type of roots, and find the solutions by using the quadratic formula.

22) $x^2 - 2x + 9 = 0$

$-32 \Rightarrow$ 2 complex solutions

$x = \frac{-2 \pm i\sqrt{32}}{2}$ or

$x = \frac{-2 \pm 4i\sqrt{2}}{2}$

23) $2x^2 + 19x - 33 = 0$

$625 \Rightarrow$ 2 solutions

$\boxed{x = 1.5 \quad x = -11}$

24) $x^2 - 10x + 25 = 0$

$0 \Rightarrow$ 1 solution

$\boxed{x = 5}$

****PLEASE keep in mind: You may not have "word-for-word" questions like this on your test, BUT the majority of what's on this study guide will be on your test!****