

Homework: Imaginary/Complex Numbers

Directions: Simplify each expression.

<p>1.) $15i \cdot 4i$</p> $60i^2$ $= 60(-1)$ $= \boxed{-60}$	<p>2.) $8i \cdot -9i \cdot 6i$</p> $-432i^3$ $= -432(-i)$ $= \boxed{432i}$	<p>3.) $12i + 9i$</p> $\boxed{21i}$	<p>4.) $3i^2 \cdot 7i^2$</p> $21i^4$ $21(1)$ $\boxed{21}$
---	---	--	--

Directions: Solve each equation using the square root method.

<p>5.) $x^2 + 36 = 0$</p> $\sqrt{x^2} = \sqrt{-36}$ $x = \pm 6i$	<p>6.) $x^2 + 40 = 0$</p> $\sqrt{x^2} = \sqrt{-40}$ $x = \pm 2i\sqrt{10}$	<p>7.) $3x^2 + 48 = 0$</p> $\sqrt{x^2} = \sqrt{-16}$ $x = \pm 4i$	<p>8.) $2x^2 + 36 = 0$</p> $\sqrt{x^2} = \sqrt{-18}$ $x = \pm 3i\sqrt{2}$
---	--	--	--

Directions: Simplify each expression. Write the final answer in the form $a + bi$.

<p>9.) $(11 - 7i) + (2 - 5i)$</p> $\boxed{13 - 12i}$	<p>10.) $(-6 + 10i) - (1 - 2i)$</p> $\boxed{-7 + 12i}$	<p>11.) $(-3 + 8i) - (1 + 6i)$</p> $\boxed{-4 + 2i}$
<p>12.) $-5i(-2 - i)$</p> $10i + 5i^2$ $10i - 5$ $\Rightarrow \boxed{-5 + 10i}$	<p>13.) $(7 + i)(4 + 3i)$</p> $28 + 21i + 4i + 3i^2$ $28 + 25i - 3$ $\Rightarrow \boxed{25 + 25i}$	<p>14.) $(-3 - 8i)(1 - 2i)$</p> $-3 + 6i - 8i + 16i^2$ $-3 - 2i - 16$ $\boxed{-19 - 2i}$
<p>15.) $(-7 + i)^2$</p> $(-7 + i)(-7 + i)$ $49 - 7i - 7i + i^2$ $49 - 14i - 1$ $\boxed{48 - 14i}$	<p>16.) $(3 + 5i)(3 - 5i)$</p> $9 - 15i + 15i - 25i^2$ $9 + 25$ $\boxed{36}$	<p>17.) $(2 - 8i)(8i + 2)$</p> $16i + 4 - 64i^2 - 16i$ $4 + 64$ $\boxed{68}$