Simplfiy each.

1. a. $\sqrt{-396}$

$= \sqrt{-36 \cdot 11}$

$= 6i\sqrt{11}$

b. $8\sqrt{-189}$

$= 8\sqrt{-9 \cdot 21}$

$= 8 \cdot 3i\sqrt{21}$

$= 24i\sqrt{21}$

2. a. $\sqrt{-324} - \sqrt{-289}$

$= 18i - 17i$

$= i$

b. $\sqrt{-18} + \sqrt{-50}$

$9 \cdot 2 \quad 25 \cdot 2$

$= 3i\sqrt{2} + 5i\sqrt{2}$

$= 8i\sqrt{2}$

Simplify each.

You find the sum and difference of imaginary #'s the same way as any other algebraic expressions....Combine like terms

3. $(4 + 6i) + (7 - 13i)$

$= 11 - 7i$

4. $2(3 - 4i) - 8(10 - 2i)$

$= 6 - 8i - 80 + 16i$

$= -74 + 8i$

Write each as a Complex Number in Standard Form (a + bi)

a + bi ⟶ this means the real part is first and the imaginary part is second

5. $2 + \sqrt{-9}$

$2 + 3i$

6. $\sqrt{-12} - 5$

$\sqrt{4 \cdot 3}$

$-5 + 2i\sqrt{3}$

Simplify each expression:

1. $(6 - \sqrt{-64}) + (5 + \sqrt{-49})$

$(6 - 8i) + (5 + 7i) = \boxed{11 - i}$

2. $(-11 + \sqrt{-9}) - (6 - \sqrt{144})$

$(6 - 12)$

$(-11 + 3i) - (-6)$

$\boxed{-5 + 3i}$

Simplify each.

1. $\sqrt{2} \cdot \sqrt{2}$

$= \sqrt{2 \cdot 2}$

$= \sqrt{4}$

$= \boxed{2}$

2. $\boxed{3\sqrt{7} \cdot 2\sqrt{7}}$

$3 \cdot 2 \cdot \sqrt{7} \cdot \sqrt{7}$

$6 \cdot 7$

$= \boxed{42}$

You can now finish Hwk #15 Sec 5-6

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Problems 3-5, 11, 13-15, 30, 34, 59, 60

$5\sqrt{6} \cdot 5\sqrt{7}$

$5 \cdot 5\sqrt{6}\sqrt{7} = \boxed{25\sqrt{42}}$

$= \sqrt{8} \cdot \sqrt{2} = \sqrt{8 \cdot 2} = \sqrt{16}$

$\boxed{4}$

$i = \sqrt{-1}$

$i^2 = \sqrt{-1} \cdot \sqrt{-1} = -1$