N.CN.A.2: Square Roots of Negative Numbers 3

1 Expressed in simplest form, \( \sqrt{-18} - \sqrt{-8} \) is equivalent to
   1) \(-\sqrt{10}\)
   2) \(5i\)
   3) \(i\sqrt{2}\)
   4) \(-i\sqrt{2}\)

2 Expressed in simplest form, \( \sqrt{-18} - \sqrt{-32} \) is
   1) \(-\sqrt{2}\)
   2) \(-7\sqrt{2}\)
   3) \(-i\sqrt{2}\)
   4) \(7i\sqrt{2}\)

3 When expressed as a monomial in terms of \( i \),
   \( 2\sqrt{-32} - 5\sqrt{-8} \) is equivalent to
   1) \(2\sqrt{2i}\)
   2) \(2i\sqrt{2}\)
   3) \(-2i\sqrt{2}\)
   4) \(18i\sqrt{2}\)

4 Expressed in simplest form, \( 2\sqrt{-50} - 3\sqrt{-8} \) is equivalent to
   1) \(16i\sqrt{2}\)
   2) \(3i\sqrt{2}\)
   3) \(4i\sqrt{2}\)
   4) \(-\sqrt{-42}\)

5 If \( 2\sqrt{-2} \) is subtracted from \( 3\sqrt{-18} \), the difference is
   1) \(7i\sqrt{2}\)
   2) \(11i\sqrt{2}\)
   3) \(-7i\sqrt{2}\)
   4) \(-11i\sqrt{2}\)

6 In terms of \( i \), express in simplest form:
   \( \sqrt{-64} - 3\sqrt{-4} \)

7 Express as a monomial in terms of \( i \):
   \( 3\sqrt{-32} - \sqrt{-8} \)

8 Express \( 7\sqrt{-8} - \sqrt{-50} \) as a monomial in terms of \( i \).

9 Express \( 4\sqrt{-25} - 2\sqrt{-81} \) as a monomial in terms of \( i \).

10 Express \( 3\sqrt{-16} - 2\sqrt{-9} \) in terms of \( i \).

11 Express as a monomial in terms of \( i \):
   \( 8\sqrt{-36} - 4\sqrt{-49} \)

12 Express in simplest form in terms of \( i \):
   \( 5\sqrt{-25} - 3\sqrt{-100} \)

13 Express \( 4\sqrt{-144} - 3\sqrt{-49} \) as a monomial in terms of \( i \).

14 Express \( 3\sqrt{-27} - 2\sqrt{-75} \) as a monomial in terms of \( i \).

15 Simplify and express in terms of \( i \):
   \( 5\sqrt{-4} + \sqrt{-1} - 2\sqrt{-9} \)
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Answer Section

1 ANS: 3         REF: 018521siii

2 ANS: 3
\[ \sqrt{-9} - \sqrt{-1} \sqrt{2} - \sqrt{-16} \sqrt{-1} \sqrt{2} = 3i \sqrt{2} - 4i \sqrt{2} = -i \sqrt{2} \]

REF: 061404a2

3 ANS: 3
\[ 2\sqrt{-32} - 5\sqrt{-8} = 8i \sqrt{2} - 10i \sqrt{2} = -2i \sqrt{2} \]

REF: 080507b

4 ANS: 3         REF: 089018siii

5 ANS: 1         REF: 069929siii

6 ANS: 2i

REF: 019702siii

7 ANS: 10i \sqrt{2}

REF: 068907siii

8 ANS: 9i \sqrt{2}

REF: 088904siii

9 ANS: 2i

REF: 080006siii

10 ANS: 6i

REF: 018903siii

11 ANS: 20i

REF: 010402siii

12 ANS: -5i

REF: 060203siii

13 ANS: 27i

REF: 069404siii
14 ANS: 
$-i\sqrt{3}$

REF: 019403siii

15 ANS: 
$5i$

REF: 088606siii