Name: _____

N.CN.A.2: Square Roots of Negative Numbers 1

1 In simplest form, $\sqrt{-300}$ is equivalent to
1) $3i\sqrt{10}$
2) $5i\sqrt{12}$
3) $10i\sqrt{3}$
4) $12i\sqrt{5}$

2 The expression $\frac{3}{4}\sqrt{-80}$ is equivalent to
1) $3i\sqrt{5}$
2) $2i\sqrt{15}$
3) $-3\sqrt{5}$
4) $-2\sqrt{15}$

3 The expression $\sqrt{-180x^{16}}$ is equivalent to
1) $-6x^4\sqrt{5}$
2) $-6x^8\sqrt{5}$
3) $6x^4i\sqrt{5}$
4) $6x^8i\sqrt{5}$

4 The expression $\frac{\sqrt{-50}}{\sqrt{2}}$ is equivalent to
1) $-5i$
2) -5
3) $5i$
4) 5

5 Expressed in simplest form, $\frac{\sqrt{-20}}{\sqrt{5}}$ is equivalent to
1) $-2i$
2) $2i$
3) $\sqrt{2i}$
4) $\frac{2i}{\sqrt{5}}$

6 Expression in simplest form, $\frac{\sqrt{-36}}{-\sqrt{4}}$ is equivalent to
1) $3i$
2) $-3i$
3) 3
4) -3

7 The expression $\frac{\sqrt{-36}}{-\sqrt{36}}$ is equivalent to
1) $6i$
2) i
3) $-i$
4) 5

8 Simplify: $\sqrt{-9} \times \sqrt{-16}$

9 Simplify: $\sqrt{-3} \times \sqrt{-4}$

10 What is the product of $5+\sqrt{-36}$ and $1-\sqrt{-49}$, expressed in simplest $a+bi$ form?
1) $-37+41i$
2) $5-71i$
3) $47+41i$
4) $47-29i$

11 Express the product of $(2+\sqrt{-9})$ and $(3-\sqrt{-16})$ in the form $a+bi$.

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Answer Section

1 ANS: 3
$\sqrt{-300} = \sqrt{100}\sqrt{-1}\sqrt{3}$

REF: 061006a2

2 ANS: 1
$\frac{3}{4}\sqrt{-1}\sqrt{16}\sqrt{5} = 3i\sqrt{5}$

REF: 061601a2

3 ANS: 4
$\sqrt{-180x^{16}} = 6x^8 i\sqrt{5}$

REF: 081524a2

4 ANS: 3
$\frac{\sqrt{-50}}{\sqrt{2}} = \frac{\sqrt{2}\sqrt{25}\sqrt{-1}}{\sqrt{2}} = 5i$

REF: 080816b

5 ANS: 2
$\frac{\sqrt{-20}}{\sqrt{5}} = \frac{\sqrt{5}\sqrt{4}\sqrt{-1}}{\sqrt{5}} = 2i$

REF: 080905b

6 ANS: 2 REF: 068830siii

7 ANS: 3 REF: 069616siii

8 ANS:
-12

REF: 039413al

9 ANS:
$-2\sqrt{3}$

REF: 099511al

10 ANS: 4
$(5+\sqrt{-36})(1-\sqrt{-49}) = (5+6i)(1-7i) = 5-35i+6i-42i^2 = 5-29i-42(-1) = 47-29i$

REF: 080314b

11 ANS:
$18+i$

REF: 068102siii