A2.N.6: Square Roots of Negative Numbers 1: Write square roots of negative numbers in terms of i

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

3 What is the sum of $\sqrt{-2}$ and $\sqrt{-18}$?
1) $5i\sqrt{2}$
2) $4i\sqrt{2}$
3) $2i\sqrt{5}$
4) $6i$

4 The sum of $\sqrt{-18}$ and $\sqrt{-72}$ is
1) $6i$
2) $36i$
3) $3\sqrt{10}$
4) $9i\sqrt{2}$

5 The sum of $\sqrt{-27}$ and $\sqrt{-12}$ is
1) $-5\sqrt{3}$
2) $i\sqrt{39}$
3) $5i\sqrt{3}$
4) $3i\sqrt{5}$

6 The sum of $3\sqrt{-8}$ and $4\sqrt{-50}$ is
1) $12\sqrt{-58}$
2) $26i\sqrt{2}$
3) $7i\sqrt{58}$
4) $7i\sqrt{2}$

7 The expression $3\sqrt{-18}+5\sqrt{-12}$ is equivalent to
1) $9i\sqrt{2}+10i\sqrt{3}$
2) $6i\sqrt{2}+7i\sqrt{3}$
3) $19i\sqrt{5}$
4) $-90\sqrt{6}$

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

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

10 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) $18i\sqrt{2}$

11 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) $-\sqrt{-42}$

12 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) $-11i\sqrt{2}$

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

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

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

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

A2.N.6: Square Roots of Negative Numbers 1: Write square roots of negative numbers in terms of i

Answer Section

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

REF: 061006a2

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

REF: 081524a2

3 ANS: 2 REF: 060215b

4 ANS: 4 REF: 068716siii

5 ANS: 3 REF: 088718siii

6 ANS: 2 REF: 069820siii

7 ANS: 1 REF: 060117siii

8 ANS: 3 REF: 018521siii

9 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

10 ANS: 3 REF: 080507b

11 ANS: 3 REF: 089018siii

12 ANS: 1 REF: 069929siii

13 ANS: 3 REF: 080816b

14 ANS: 2 REF: 080905b

15 ANS: 2 REF: 068830siii

16 ANS: 3 REF: 069616siii