

DIRECTIONS: Simplify.

1.  $(\sqrt{11} + 2)^2$

2.  $(2 + 3\sqrt{2})(3 + \sqrt{2})$

3.  $(\sqrt{10} - \sqrt{3})(\sqrt{10} + \sqrt{3})$

4.  $\frac{\sqrt{14}}{\sqrt{2} + \sqrt{7}}$

5.  $\frac{\sqrt{6} + \sqrt{5}}{2} \bullet \frac{\sqrt{6} - \sqrt{5}}{2}$

6.  $\frac{2 + \sqrt{5}}{\sqrt{3} - \sqrt{5}}$

DIRECTIONS: Solve. If an equation has no real solution, say so.

7.  $\sqrt{3x - 5} = 4$

8.  $10 + 3\sqrt{x} = 1$

9.  $\sqrt[3]{4x} + 7 = 5$

10.  $\sqrt{10x + 15} - 4 = x$

11.  $x = 8 + 2\sqrt{x}$

12.  $\sqrt{4x - 7} = \sqrt{2x} + 1$

DIRECTIONS: Simplify.

13.  $\sqrt{-49}$

14.  $\sqrt{-28}$

15.  $7i \bullet 5i$

16.  $\sqrt{-6} \bullet \sqrt{-15}$

17.  $(2i\sqrt{3})^2$

18.  $\frac{6}{7i}$

19.  $\frac{\sqrt{24}}{3i\sqrt{8}}$

20.  $-\frac{\sqrt{21}}{\sqrt{-35}}$

DIRECTIONS: Solve.

21.  $y^2 + 81 = 0$

22.  $3n^2 + 28 = 4$

DIRECTIONS: Simplify

23.  $(7 + 3i) + (2 - 5i)$

24.  $2(-3 + i) - 5(2 - 2i)$

25.  $-4i(-5 - i)$

26.  $(4 + 9i)(4 - 9i)$

27.  $(3 - 5i)^2$

28.  $(\sqrt{5} - \sqrt{-8})(\sqrt{5} + \sqrt{-8})$

29.  $\frac{3}{2+3i}$

30. Find the reciprocal of  
 $-\sqrt{3} + i\sqrt{2}$