

Name _____

6-8B Lesson Master**Questions on SPUR Objectives**
See Student Edition pages 446–449 for objectives.**SKILLS** Objective CIn 1–9, solve for x . Give all solutions, both real and imaginary.

1. a. $x^2 = 900$

b. $x^2 = -900$

2. a. $x^2 = -14$

b. $x^2 = 14$

3. a. $5x^2 = -20$

b. $5x^2 = 20$

4. a. $-8x^2 = 24$

b. $8x^2 = 24$

5. a. $x^2 + 8 = 28$

b. $x^2 + 8 = -28$

6. a. $x^2 - 8 = 28$

b. $x^2 - 8 = -28$

7. a. $3x^2 + 17 = 130$

b. $3x^2 + 17 = -130$

8. a. $3x^2 - 17 = 130$

b. $3x^2 - 17 = -130$

9. a. $(x - 1)^2 + 20 = 5$

b. $(x + 5)(x - 5) = -31$

10. Solve $b^2 - 12 = -13$. Write the solutions

a. with a radical sign.

b. without a radical sign.

11. Solve $x^2 + 8 = -8$. Write the solutions

a. with a radical sign.

b. without a radical sign.

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SKILLS Objective E

In 12–17, simplify the expression.

12. $\sqrt{-11} =$ _____

13. $\sqrt{-100} =$ _____

14. $-\sqrt{-1296} =$ _____

15. $\frac{\sqrt{-75}}{\sqrt{-288}} =$ _____

16. $8i^2 =$ _____

17. $-5i^2 =$ _____

In 18 and 19, evaluate $\sqrt{b^2 - 4ac}$ for the given values of a , b , and c .

18. $a = 5, b = 4, c = 1$ _____

19. $a = -2, b = 1, c = -5$ _____

In 20–33, perform the indicated operations and simplify the result.

20. $6i - 3i + 9i =$ _____

21. $10i - 16i =$ _____

22. $(3i)(7i) =$ _____

23. $(6i)^2 =$ _____

24. $\sqrt{-16} + \sqrt{-4} =$ _____

25. $\sqrt{-81} - \sqrt{-64} =$ _____

26. $\sqrt{-25} \cdot \sqrt{-100} =$ _____

27. $\sqrt{-49} \cdot \sqrt{-49} =$ _____

28. $\sqrt{-5} \cdot \sqrt{-10} =$ _____

29. $\sqrt{-100} \cdot \sqrt{100} =$ _____

30. $\frac{12i}{3i} =$ _____

31. $\frac{\sqrt{-144}}{\sqrt{-81}} =$ _____

32. $\frac{17i - 12i}{10i} =$ _____

33. $\frac{\sqrt{-36}}{\sqrt{-81}} =$ _____

34. Give examples for values of a and b so that:

a. $\sqrt{a} \cdot -\sqrt{b} = -\sqrt{ab}$ _____

b. $\sqrt{a} \cdot -\sqrt{b} \neq -\sqrt{ab}$ _____

35. **Multiple Choice** The product of a pure imaginary number

and the square root of a positive real number is _____.

A always a pure imaginary number

B always a positive real number

C always a negative real number

D either a positive or negative real number

36. Show that $4i$ is a square root of -16 .

37. Show that $i\sqrt{13}$ is a square root of -13 .
