Name

8-6B Lesson Master

Questions on SPUR Objectives
See Student Edition pages 574–577 for objectives.

SKILLS Objective D

In 1–10, rationalize the denominator and simplify. Do your work by hand; check with a CAS.

1. $\frac{1}{\sqrt{5}}$ _____
2. $\frac{2}{\sqrt{3}}$ _____
3. $\frac{6}{\sqrt{6}}$ _____
4. $\frac{5}{2\sqrt{10}}$ _____
5. $\frac{4}{\sqrt{x}}$ _____
6. $\frac{1}{\sqrt{x^3}}$ _____
7. $\frac{5a}{\sqrt{a}}$ _____
8. $\frac{3e}{\sqrt{e^7}}$ _____
9. $\frac{8n}{\sqrt{6n^5}}$ _____
10. $\frac{9}{c\sqrt{c}}$ _____

In 11–14, multiply and simplify. Do your work by hand; check with a CAS.

11. $(2+\sqrt{3})(2-\sqrt{3})$ _____
12. $(d+\sqrt{2})(d-\sqrt{2})$ _____
13. $(3-\sqrt{5})(3+\sqrt{5})$ _____
14. $(a+\sqrt{b})(a-\sqrt{b})$ _____

In 15–24, rationalize the denominator. Do your work by hand; check with a CAS.

15. $\frac{7}{3+\sqrt{2}}$ _____
16. $\frac{4}{8-\sqrt{5}}$ _____
17. $\frac{x}{\sqrt{x}+1}$ _____
18. $\frac{4}{6-\sqrt{r}}$ _____
19. $\frac{t}{7+\sqrt{t}}$ _____
20. $\frac{6}{\sqrt{10}-\sqrt{7}}$ _____
21. $-\frac{1}{6+3\sqrt{5}}$ _____
22. $\frac{2}{27-18\sqrt{2}}$ _____
23. $\frac{5+\sqrt{3}}{5-\sqrt{3}}$ _____
24. $\frac{2-\sqrt{5}}{2+\sqrt{5}}$ _____

In 25–28, write the expression in radical form with a rational denominator. Assume that the variables are positive.

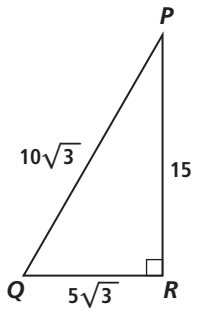
25. $5^{\frac{3}{2}} \cdot a^{-\frac{1}{2}}$ _____
26. $b^{-\frac{7}{2}}c$ _____
27. $z^{\frac{3}{2}}w^{-\frac{1}{2}}$ _____
28. $r^{-\frac{5}{2}}s$ _____

Name

8-6B page 2

29. Show that $(\sqrt{37} - 6)$ is 12 less than its reciprocal.

In 30–32, use the triangle at the right. Write the ratio with a rationalized denominator.

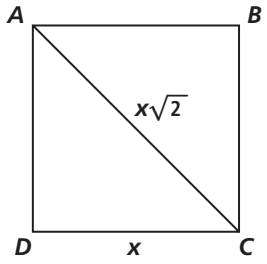


30. $\frac{PR}{QR}$ _____

31. $\frac{PR}{QP}$ _____

32. $\frac{QR}{QP}$ _____

In 33 and 34, use the square at the right. Write the ratio with a rationalized denominator.



33. $\frac{CD}{AC}$ _____

34. $\frac{AC}{CD}$ _____

REVIEW Lesson 7-2, Objective B

In 35–43, evaluate and write in standard form.

35. $(-5)^2$ _____

36. $(15)^3$ _____

37. $(-1)^{19}$ _____

38. $(-12)^2$ _____

39. $2^3 \cdot 7^3$ _____

40. $6^3 \cdot 6^2$ _____

41. $1.9 \cdot 10^5$ _____

42. $44{,}066 \cdot 10^0$ _____

43. $(9.1 \cdot 10^2)(3.4 \cdot 10^3)$ _____