

5-4

Skills Practice

Factoring Polynomials

Factor completely. If the polynomial is not factorable, write *prime*.

1. $7x^2 - 14x$

$7x(x-2)$

2. $19x^3 - 38x^2$

3. $21x^3 - 18x^2y + 24xy^2$

$3x(7x^2 - 6xy + 8y^2)$

4. $8j^3k - 4jk^3 - 7$

5. $a^2 + 7a - 18$

$(a+9)(a-2)$

6. $2ak - 6a + k - 3$

7. $b^2 + 8b + 7$

$(b+7)(b+1)$

8. $z^2 - 8z - 10$

9. $m^2 + 7m - 18$

$(m-2)(m+9)$

10. $2x^2 - 3x - 5$

11. $4z^2 + 4z - 15$

$(2z+5)(2z-3)$

12. $4p^2 + 4p - 24$

13. $3y^2 + 21y + 36$

$3(y+4)(y+3)$

14. $c^2 - 100$

15. $4f^2 - 64$

$4(f+4)(f-4)$

16. $d^2 - 12d + 36$

17. $9x^2 + 25$

prime

18. $y^2 + 18y + 81$

19. $n^3 - 125$

$(n-5)(n^2+5n+25)$

20. $m^4 - 1$

Simplify. Assume that no denominator is equal to 0.

21. $\frac{x^2 + 7x - 18}{x^2 + 4x - 45}$

$\frac{x-2}{x-5}$

22. $\frac{x^2 + 4x + 3}{x^2 + 6x + 9}$

23. $\frac{x^2 - 10x + 25}{x^2 - 5x}$

$\frac{x-5}{x}$

24. $\frac{x^2 + 6x - 7}{x^2 - 49}$

5-5

Skills Practice**Roots of Real Numbers**

Use a calculator to approximate each value to three decimal places.

1. $\sqrt{230}$ 15.166

2. $\sqrt{38}$

3. $-\sqrt{152}$ -12.329

4. $\sqrt{5.6}$

5. $\sqrt[3]{88}$ 4.448

6. $\sqrt[3]{-222}$

7. $-\sqrt[4]{0.34}$ -0.764

8. $\sqrt[5]{500}$

Simplify.

9. $\pm\sqrt{81}$ ± 9

10. $\sqrt{144}$

11. $\sqrt{(-5)^2}$ 5

12. $\sqrt{-5^2}$

13. $\sqrt{0.36}$ 0.6

14. $-\sqrt{\frac{4}{9}}$

15. $\sqrt[3]{-8}$ -2

16. $-\sqrt[3]{27}$

17. $\sqrt[3]{0.064}$ 0.4

18. $\sqrt[5]{32}$

19. $\sqrt[4]{81}$ 3

20. $\sqrt{y^2}$

21. $\sqrt[3]{125s^3}$ 5s

22. $\sqrt{64x^6}$

23. $\sqrt[3]{-27a^6}$ $-3a^2$

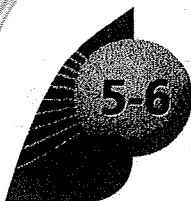
24. $\sqrt{m^8n^4}$

25. $-\sqrt{100p^4q^2}$ $-10p^2|q|$

26. $\sqrt[4]{16w^4v^8}$

27. $\sqrt{(-3c)^4}$ $9c^2$

28. $\sqrt{(a+b)^2}$



5-6 Skills Practice

Radical Expressions

Lesson 5-6

Simplify.

1. $\sqrt{24}$ $2\sqrt{6}$

2. $\sqrt{75}$

3. $\sqrt[3]{16}$ $2\sqrt[3]{2}$

4. $-\sqrt[4]{48}$

5. $4\sqrt{50x^5}$ $20x^2\sqrt{3x}$

6. $\sqrt[4]{64a^4b^4}$

7. $\sqrt[3]{-\frac{1}{8}d^2f^5}$ $-\frac{1}{2}A\sqrt[3]{d^2f^2}$

8. $\sqrt{\frac{25}{36}s^2t}$

9. $-\sqrt{\frac{3}{7}}$ $-\frac{\sqrt{21}}{7}$

10. $\sqrt[3]{\frac{2}{9}}$

11. $\sqrt{\frac{2g^3}{5z}}$ $\frac{g\sqrt{10gz}}{5z}$

12. $(3\sqrt{3})(5\sqrt{3})$

13. $(4\sqrt{12})(3\sqrt{20})$ $48\sqrt{15}$

14. $\sqrt{2} + \sqrt{8} + \sqrt{50}$

15. $\sqrt{12} - 2\sqrt{3} + \sqrt{108}$ $6\sqrt{3}$

16. $8\sqrt{5} - \sqrt{45} - \sqrt{80}$

17. $2\sqrt{48} - \sqrt{75} - \sqrt{12}$ $\sqrt{3}$

18. $(2 + \sqrt{3})(6 - \sqrt{2})$

19. $(1 - \sqrt{5})(1 + \sqrt{5})$ -4

20. $(3 - \sqrt{7})(5 + \sqrt{2})$

21. $(\sqrt{2} - \sqrt{6})^2$ $8 - 4\sqrt{3}$

22. $\frac{3}{7 - \sqrt{2}}$

23. $\frac{4}{3 + \sqrt{2}}$ $\frac{12 - 4\sqrt{2}}{17}$

24. $\frac{5}{8 - \sqrt{6}}$