

Homework #13-27 (odd)

#29-65 (every other odd)

#67-75 (odd)

#77-99 (every other odd)

#105-121 (every other odd)

1.4 Exercises

Developing Skills

In Exercises 1-12, find the greatest common factor.

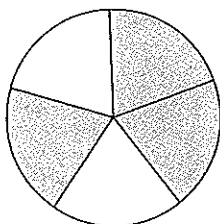
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|------------------------|-----------------------|
| 1. 6, 10 | 2. 6, 9 |
| 3. 20, 45 | 4. 48, 64 |
| 5. 45, 90 | 6. 27, 54 |
| 7. 18, 84, 90 | 8. 84, 98, 192 |
| 9. 240, 300, 360 | 10. 117, 195, 507 |
| 11. 134, 225, 315, 945 | 12. 80, 144, 214, 504 |

In Exercises 13-20, write the fraction in simplest form. See Example 1.

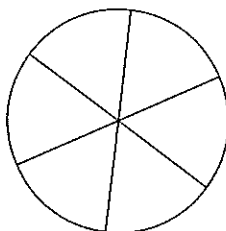
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|----------------------|----------------------|
| 13. $\frac{2}{8}$ | 14. $\frac{3}{18}$ |
| 15. $\frac{12}{18}$ | 16. $\frac{16}{56}$ |
| 17. $\frac{60}{192}$ | 18. $\frac{45}{225}$ |
| 19. $\frac{28}{350}$ | 20. $\frac{88}{154}$ |

In Exercises 21-24, each figure is divided into regions of equal area. Write a fraction that represents the shaded portion of the figure. Then write the fraction in simplest form.

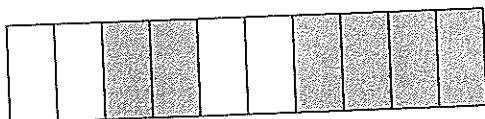
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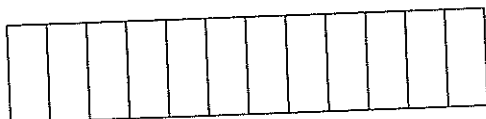
22.



23.



24.



In Exercises 25-28, write an equivalent fraction with the indicated denominator. See Example 2.

25. $\frac{3}{8} = \frac{\quad}{16}$

26. $\frac{4}{5} = \frac{\quad}{15}$

27. $\frac{6}{15} = \frac{\quad}{25}$

28. $\frac{21}{49} = \frac{\quad}{28}$

In Exercises 29-42, find the sum or difference. Write the result in simplest form.

29. $\frac{7}{15} + \frac{2}{15}$

30. $\frac{13}{35} + \frac{5}{35}$

31. $\frac{9}{11} + \frac{5}{11}$

32. $\frac{5}{6} + \frac{13}{6}$

33. $\frac{9}{16} - \frac{3}{16}$

34. $\frac{15}{32} - \frac{7}{32}$

35. $-\frac{23}{11} + \frac{12}{11}$

36. $-\frac{39}{23} - \frac{11}{23}$

37. $\frac{3}{4} - \frac{5}{4}$

38. $\frac{3}{8} - \frac{5}{8} - \frac{1}{4}$

39. $\frac{7}{10} + (-\frac{3}{10})$

40. $\frac{11}{15} + (-\frac{2}{15})$

41. $\frac{2}{5} + \frac{4}{5} + \frac{1}{5}$

42. $\frac{2}{9} + \frac{4}{9} + \frac{1}{9}$

In Exercises 43-66, evaluate the expression. Write the result in simplest form. See Examples 3, 4, and 5.

43. $\frac{1}{2} + \frac{1}{3}$

44. $\frac{3}{5} + \frac{1}{2}$

45. $\frac{1}{4} - \frac{1}{3}$

46. $\frac{2}{3} - \frac{1}{6}$

47. $\frac{3}{16} + \frac{3}{8}$

48. $\frac{2}{3} + \frac{4}{9}$

49. $-\frac{1}{8} - \frac{1}{6}$

50. $-\frac{13}{8} - \frac{3}{4}$

51. $4 - \frac{8}{3}$

52. $2 - \frac{17}{25}$

53. $-\frac{7}{8} - \frac{5}{6}$

54. $-\frac{5}{12} - \frac{1}{9}$

55. $\frac{3}{4} - \frac{2}{5}$

56. $\frac{5}{8} - \frac{1}{6}$

57. $-\frac{5}{6} - (-\frac{3}{4})$

58. $-\frac{1}{9} - (-\frac{2}{5})$

59. $3\frac{1}{2} + 5\frac{2}{3}$

60. $5\frac{3}{4} + 8\frac{1}{10}$

61. $1\frac{3}{16} - 2\frac{1}{4}$

62. $5\frac{7}{8} - 2\frac{1}{2}$

63. $15\frac{5}{6} - 20\frac{1}{4}$

64. $6 - 3\frac{5}{8}$

65. $-5\frac{2}{3} - 4\frac{5}{12}$

66. $-2\frac{3}{4} - 3\frac{1}{5}$

In Exercises 67-72, evaluate the expression. Write the result in simplest form. See Example 6.

67. $\frac{5}{12} - \frac{3}{8} + \frac{5}{16}$

68. $-\frac{3}{7} + \frac{5}{14} + \frac{3}{4}$

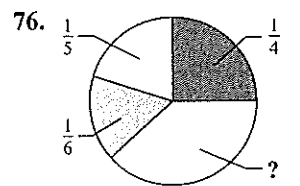
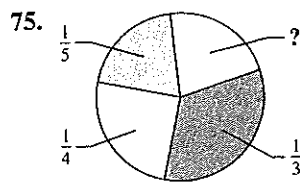
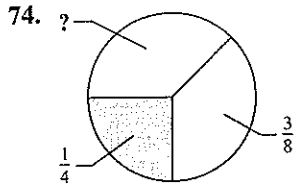
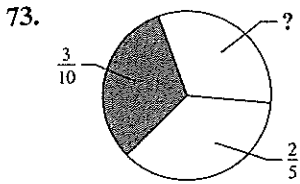
69. $3 + \frac{12}{3} + \frac{1}{9}$

70. $1 + \frac{2}{3} - \frac{5}{6}$

71. $2 - \frac{25}{6} - \frac{3}{4}$

72. $2 - \frac{15}{16} - \frac{7}{8}$

In Exercises 73–76, determine the unknown fractional part of the circle graph.



In Exercises 77–100, evaluate the expression. Write the result in simplest form. See Examples 7 and 8.

77. $\frac{1}{2} \cdot \frac{3}{4}$

78. $\frac{3}{5} \cdot \frac{1}{2} \cdot \frac{3}{10}$

79. $-\frac{2}{3} \cdot \frac{5}{7}$

80. $-\frac{5}{6} \cdot \frac{1}{2} \cdot -\frac{5}{12}$

81. $\frac{2}{3} \cdot (-\frac{9}{16})$

82. $(\frac{5}{3})(-\frac{3}{5}) - 1$

83. $(-\frac{3}{4})(-\frac{4}{9})$

84. $(-\frac{7}{16})(-\frac{12}{5}) \cdot \frac{21}{20}$

85. $(\frac{5}{18})(\frac{3}{4})$

86. $(\frac{3}{28})(\frac{7}{8}) \cdot \frac{3}{32}$

87. $(\frac{11}{12})(-\frac{9}{44})$

88. $(\frac{5}{12})(-\frac{6}{25}) \cdot -\frac{1}{10}$

89. $(-\frac{3}{11})(-\frac{11}{3})$

90. $(-\frac{7}{15})(-\frac{15}{7}) \cdot 1$

91. $9(\frac{4}{15})$

92. $24(\frac{7}{18}) \cdot \frac{28}{3}$

93. $(-\frac{3}{2})(-\frac{15}{16})(\frac{12}{25})$

94. $(\frac{1}{2})(-\frac{4}{15})(-\frac{5}{24}) \cdot \frac{1}{36}$

95. $6(\frac{3}{4})(\frac{2}{9})$

96. $8(\frac{5}{12})(\frac{3}{10}) \cdot 1$

97. $2\frac{3}{4} \cdot 3\frac{2}{3}$

98. $2\frac{4}{5} \cdot 6\frac{2}{3} \cdot \frac{56}{3}$

99. $-5\frac{2}{3} \cdot 4\frac{1}{2}$

100. $-8\frac{1}{2} \cdot 3\frac{2}{5} \cdot -\frac{289}{10}$

In Exercises 101–104, find the reciprocal of the number. Show that the product of the number and its reciprocal is 1.

101. $7 \cdot \frac{1}{7}; 7 \cdot \frac{1}{7} = 1$

102. $14 \cdot \frac{1}{14}; 14 \cdot \frac{1}{14} = 1$

103. $\frac{4}{7} \cdot \frac{7}{4}; \frac{4}{7} \cdot \frac{7}{4} = 1$

104. $-\frac{5}{9} \cdot -\frac{9}{5}; -\frac{5}{9} \cdot -\frac{9}{5} = 1$

In Exercises 105–122, evaluate the expression and write the result in simplest form. If it is not possible, explain why. See Example 9.

105. $\frac{3}{8} \div \frac{3}{4}$

106. $\frac{5}{16} \div \frac{25}{8}$

107. $-\frac{5}{12} \div \frac{45}{32}$

108. $-\frac{16}{21} \div \frac{12}{27}$

109. $\frac{3}{5} \div \frac{7}{5}$

110. $\frac{7}{8} \div \frac{3}{8}$

111. $(-\frac{5}{6}) \div (-\frac{8}{10})$

112. $(-\frac{14}{15}) \div (-\frac{24}{25})$

113. $-10 \div \frac{1}{9}$

114. $-6 \div \frac{1}{3} - 18$

115. $0 \div (-21)$

116. $0 \div (-33) \cdot 0$

117. $\frac{3}{5} \div 0$

118. $\frac{11}{13} \div 0$

119. $3\frac{3}{4} \div 1\frac{1}{2}$

120. $2\frac{4}{9} \div 5\frac{1}{3}$

121. $3\frac{3}{4} \div 2\frac{5}{8}$

122. $1\frac{5}{6} \div 2\frac{1}{3}$

In Exercises 123–132, write the fraction in decimal form. (Use the bar notation for repeating digits.)

123. $\frac{3}{4} \approx 0.75$

124. $\frac{5}{8} \approx 0.625$

125. $\frac{9}{16} \approx 0.5625$

126. $\frac{7}{20} \approx 0.35$

127. $\frac{2}{3} \approx 0.\bar{6}$

128. $\frac{5}{6} \approx 0.8\bar{3}$

129. $\frac{7}{12} \approx 0.58\bar{3}$

130. $\frac{8}{15} \approx 0.5\bar{3}$

131. $\frac{5}{11} \approx 0.4\bar{5}$

132. $\frac{5}{21} \approx 0.23809\bar{5}$

In Exercises 133–146, evaluate the expression. Round your answer to two decimal places. See Examples 10 and 11.

133. $132.1 + (-25.45)$
106.65

134. $408.9 + (-13.12)$
395.78

135. $1.21 + 4.06 - 3.00$
2.27

136. $3.4 + 1.062 - 5.13$
-0.67

137. $-0.0005 - 2.01 + 0.111$
-1.90

138. $-1.0012 - 3.25 + 0.2$
-4.05

139. $(-6.3)(9.05) - 57.02$

140. $3.7(-14.8) - 54.76$

141. $(-0.05)(-85.95)$
4.30

142. $(-0.09)(-0.45)$
0.04

143. $4.69 \div 0.12$
39.08

144. $7.14 \div 0.94$
7.60

145. $1.062 \div (-2.1)$
-0.51

146. $2.011 \div (-3.3)$
-0.61

Estimation In Exercises 147 and 148, estimate the sum to the nearest integer.

147. $\frac{3}{11} + \frac{7}{10} \approx 1$

148. $\frac{5}{8} + \frac{9}{7} \approx 2$