

PROFICIENCY REVIEW

operations with whole numbers

1. 201×405 2. 9002×563 3. $8892 \div 19$ 4. $4807 \div 23$

operations with fractions

5. Completely simplify:

- a. $\frac{27}{45}$ b. $\frac{72}{64}$ c. $\frac{108}{148}$ d. $\frac{95}{35}$
6. $\frac{3}{8} + \frac{4}{7}$ 7. $\frac{7}{20} + \frac{4}{15}$ 8. $\frac{3}{14} + \frac{9}{28}$ 9. $\frac{1}{12} + \frac{3}{14} + \frac{4}{21}$
10. $\frac{11}{18} - \frac{6}{45}$ 11. $\frac{16}{24} - \frac{7}{30}$ 12. $\frac{9}{48} - \frac{5}{32}$ 13. $\frac{21}{12} - \frac{8}{18}$
14. $\frac{6}{21} \cdot \frac{9}{18}$ 15. $\frac{4}{27} \cdot \frac{45}{18}$ 16. $\frac{2}{21} \cdot 15$ 17. $13 \cdot \frac{2}{26}$
18. $\frac{6}{14} \div \frac{3}{8}$ 19. $\frac{8}{12} \div \frac{5}{6}$ 20. $\frac{7}{22} \div 14$ 21. $15 \div \frac{3}{7}$

operations with mixed numbers

22. $12\frac{2}{3} + 6\frac{1}{4}$ 23. $8\frac{1}{4} + 3\frac{5}{6}$ 24. $7\frac{3}{4} + 6\frac{2}{5}$ 25. $14\frac{7}{9} + 6\frac{1}{3}$
26. $25\frac{2}{3} - 6\frac{1}{7}$ 27. $25\frac{2}{7} - 16\frac{3}{4}$ 28. $12\frac{4}{9} - 7\frac{5}{6}$ 29. $32 - 1\frac{2}{9}$
30. $6\frac{2}{3} \cdot 2\frac{1}{4}$ 31. $2\frac{3}{5} \cdot 1\frac{4}{7}$ 32. $\frac{3}{4} \cdot 9\frac{5}{7}$ 33. $6 \cdot 8\frac{4}{9}$
34. $2\frac{3}{4} \div 1\frac{7}{10}$ 35. $12\frac{1}{2} \div 5\frac{5}{6}$ 36. $5 \div \frac{1}{4}$ 37. $8\frac{2}{9} \div 4$

order of operations

38. $59 - 4(1 + 5 \cdot 2) + 4$ 39. $5^2 - 24 \div 2 \cdot 6 + 9$
40. $(6 + 2^3) + (9 - 2)^2 - 14 - 4$ 41. $63 \cdot 4 - 5(3^2 + 4 \cdot 2^3) + 5$

Fraction → Decimal (divide top by bottom)

42. $\frac{9}{20}$

43. $\frac{81}{4}$

44. $\frac{2}{15}$

45. $\frac{25}{6}$

Decimal → Fraction Change the following to simplified fractions or mixed numbers.

46. 0.524

47. 6.002

48. 0.0025

49. 7.2076

operations with decimals

50. $35.4 + 0.8759$

51. $63.2 + 0.2348$

52. $0.23 + 3.46$

53. $23 + 2.981$

54. $938.46 - 2.86$

55. $30 - 0.82$

56. $53.783 - 23.4$

57. 52.08×2.6

58. 3001.7×0.002

59. 129.062×42.5

60. $14 \div 1.25$

61. $9.729 \div 0.02$

62. $6.729 \div 0.27$

63. $0.5 \div 3.7$

64. Write in scientific notation: a. 2,107.26 b. 0.00000237

65. Round 24,380.05392 to the nearest a. tenth b. hundredth c. thousandth

66. Simplify the radicals: a. $\sqrt{81}$ b. $\sqrt{16}$ c. $\sqrt{20}$ d. $\sqrt{27}$

67. $\sqrt{25} - \sqrt{16} + \sqrt{50}$

integers

68. $-16 + 7$

69. $-8 + (-5)$

70. $-7 + 15$

71. $-8 - 12$

72. $-14 - (-5)$

73. $15 - 22$

74. $13 - (-6)$

75. -6×7

76. $5 \times (-3)$

77. $-8 \times (-3)$

78. $-45 \div 9$ 79. $-36 \div (-9)$

80. $24 \div (-8)$

81. $-15 - 50 \div 10(-3)^2 + 2$

82. $\frac{-50 \div 2 + 3}{20 - 9}$

83. $3(-2)(9 - 5) + 10$

84. $-|5 - 8| + 3|-2 - 3|$

85. $|-7 + 5| - (|-7| + |5|)$

86. Find the average: 15, 26, 19, 17, 23

87. The average on your first three tests is 85. If all tests are equally weighted, what must you score on your fourth test to have an average of 90?

88. The school requires 1 chaperone for every 6 children for a field trip. If there are 26 children in the class, how many chaperones will be required?

percents

89. Change to a decimal: a. 53.8% b. 0.005% c. 230% d. 1.04%

90. Change to a fraction: a. 62.5% b. $\frac{1}{2}\%$ c. 140% d. 0.02%

91. Change to a percent: a. 0.0024 b. 2.36 c. 0.52 d. 1

92. Change to a percent: a. $\frac{14}{40}$ b. $\frac{211}{500}$ c. $\frac{5}{9}$ d. $\frac{3}{16}$

93. What is 32% of 84? 94. Find 18% of 66. 95. Find 115% of 62.

96. What percent of 500 is 70? 97. 400 is what percent of 80? 98. What percent of 800 is 650?

99. 56 is 70% of what number? 100. 72 is 25% of what number? 101. 15 is 120% of what number?

102. A snack bar has 80 calories. If 15 of those calories are from fat, what percent of the calories are fat?

103. The dinner bill was \$12.95. How much should she leave for a 15% tip? (Round to the nearest cent.)

104. The new 350-seat auditorium is 140% of the original auditorium in seating. How many seats were in the original auditorium?

105. Lisa got an 8% raise in salary this year. If this year's salary is \$38,340, what was Lisa's salary last year?

106. A computer system is reduced from \$2750 to \$2255. What was the percent decrease?

107. Joe has \$900 to spend on furniture (including tax). If the sales tax rate is 6%, what amount can she spend on the furniture itself?

ratio and proportion

108. A baseball player gets 12 hits in the first 18 games. At this rate, how many hits will he get in 150 games?

109. Emily is traveling in London. She can exchange \$5 for 3 British pounds. How many pounds will she receive for \$65?

110. If Wendy pedals her bicycle at 84 revolutions per minute, she travels at 14 miles per hour. How fast does she go if she pedals at 96 revolutions per minute?

111. If a 200-pound man can have 1000 milligrams of a medicine a day, how much can a 120-pound woman have?

algebra

112. Evaluate $-3x^2y - 4$ if $x = -2$ and $y = -3$.

113. Evaluate $\frac{5x - y^3}{x^2}$ for $x = -1$, $y = 3$

solve and graph on a number line

114. $6x - 3 \leq 9$

115. $-12x - 10 \leq 14$

116. $-8 \leq 3x + 7 \leq 16$

117. $11 \leq -8x - 5 \leq 27$

solve and check

118. $x - 17 = -23$

119. $14 - x = 3$

120. $-7x = -21$ 121. $\frac{2}{3}x = 8$

122. $-\frac{1}{6}x = -2$

123. $2y + 6 = 12$

124. $7x - 2 = 19$

125. $\frac{x}{-2} + 3 = 6$

126. $15x = 6x + 30$

127. $4x + 3 = 2x + 12$

128. $-4(3x - 1) = 12$

129. $3(y + 1) = -2(y - 2) - 6$

130. Add $3y^2 + 4y - 6$ to $4y^2 - 7y - 8$

answers

1.) 81,405 2.) 5,068,126 3.) 468 4.) 209 5.a) $\frac{3}{5}$ b) $1\frac{1}{8}$ c) $\frac{27}{37}$ d) $2\frac{5}{7}$ 6.) $\frac{53}{56}$ 7.) $\frac{37}{60}$ 8.) $\frac{15}{28}$ 9.) $\frac{41}{84}$ 10.) $\frac{43}{90}$

11.) $\frac{13}{30}$ 12.) $\frac{1}{32}$ 13.) $1\frac{11}{36}$ 14.) $\frac{1}{7}$ 15.) $\frac{10}{27}$ 16.) $1\frac{3}{7}$ 17.) 1 18.) $1\frac{1}{7}$ 19.) $\frac{4}{5}$ 20.) $\frac{1}{44}$ 21.) 35 22.) $18\frac{11}{12}$

23.) $12\frac{1}{12}$ 24.) $14\frac{3}{20}$ 25.) $21\frac{1}{9}$ 26.) $19\frac{11}{21}$ 27.) $8\frac{15}{28}$ 28.) $4\frac{11}{18}$ 29.) $30\frac{7}{9}$ 30.) 15 31.) $4\frac{3}{35}$ 32.) $7\frac{2}{7}$

33.) $50\frac{2}{3}$ 34.) $1\frac{21}{34}$ 35.) $2\frac{1}{7}$ 36.) 20 37.) $2\frac{1}{18}$ 38.) 19 39.) -38 40.) 45 41.) 52 42.) 0.45 43. 20.25

44.) $0.\overline{13}$ 45.) $4.\overline{16}$ 46.) $\frac{131}{250}$ 47.) $6\frac{1}{500}$ 48.) $\frac{1}{400}$ 49.) $7\frac{519}{2500}$ 50.) 36.2759 51.) 63.4348 52.) 3.69

53.) 25.981 54.) 935.6 55.) 29.18 56.) 30.383 57.) 135.408 58.) 6.0034 59.) 5485.135 60.) 11.2

61.) 486.45 62.) $24.\overline{92}$ 63.) $0.\overline{135}$ 64. a.) 2.10726×10^3 b.) 2.37×10^{-6} 65. a.) 24380.1 b.) 24380.05

c.) 24380.054 66. a.) 9 b.) 4 c.) $2\sqrt{5}$ d.) $3\sqrt{3}$ 67.) $1+5\sqrt{2}$ 68.) -9 69.) -13 70.) 8 71.) -20

72.) -9 73.) -7 74.) 19 75.) -42 76.) -15 77.) 24 78.) -5 79.) 4 80.) -3 81.) -58 82.) -2

83.) -14 84.) 12 85.) -10 86.) 20 87.) 105 88.) 5 89. a.) 0.538 b.) 0.00005 c.) 2.3 d.) 0.0104

90. a.) $\frac{5}{8}$ b.) $\frac{1}{200}$ c.) $1\frac{2}{5}$ d.) $\frac{1}{5000}$ 91. a.) 0.24% b.) 236% c.) 52% d.) 100% 92. a.) 35% b.) 42.2%

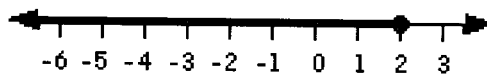
c.) $55\frac{5}{9}\%$ d.) 18.75% 93.) 26.88 94.) 11.88 95.) 71.3 96.) 14% 97.) 500% 98.) 81.25% 99.) 80

100.) 288 101.) 12.5 102.) 18.75% 103.) \$1.94 104.) 250 105.) \$35,500 106.) 18% 107.) \$849.06

108.) 100 109.) 39 110.) 16 mph 111.) 600 mg 112.) 32 113.) -32 #114 -117 are at the bottom of the

page 118.) -6 119.) 11 120.) 3 121.) 12 122.) 12 123.) 3 124.) 3 125.) -6 126.) $3\frac{1}{3}$ 127.) $4\frac{1}{2}$

128.) $-\frac{2}{3}$ 129.) -1 130.) $7y^2 - 3y - 14$ 114.) $x \leq 2$



115.) $x \geq -2$



116.) $-5 \leq x \leq 3$



117.) $-2 \geq x \geq -4$

