ALG310 Algebra 2 Please complete the Chapter 1 Review Exercises (1- 215) all.

ALG330 Algebra 2 Please complete the Chapter 1 Review Exercises (3- 213) multiples of 3 and 215. Also complete the Chapter 2 Review exercises in the textbook for the course (College Prep Algebra by Ron Larson) on pages 96 – 99 (3 – 102) m. of 3.

Review Exercises

Worked-out solutions to odd-numbered exercises at CollegePrepAlgebra.com

1.1

Classifying Real Numbers **In Exercises 1–4, determine which of the numbers in the set are (a) natural numbers, (b) integers, (c) rational numbers, and (d) irrational numbers.**

1. $\left\{-1, 4.5\overline{2}, -\frac{1}{7}, \sqrt{4}, \sqrt{5}\right\}$
2. $\left\{10, -3, \frac{4}{5}, \pi, -3.16, -\frac{19}{11}\right\}$
3. $\left\{\frac{30}{2}, 2, -\sqrt{3}, 1.5, -\pi, -\frac{10}{7}\right\}$
4. $\left\{3.75, 33, \frac{2}{3}, \frac{1}{10}, -92, -\frac{\pi}{4}\right\}$

Plotting Real Numbers **In Exercises 5–10, plot the numbers on the real number line.**

5. $-3, 5$
6. $-8, 11$
7. $-6, \frac{5}{4}$
8. $-\frac{7}{2}, 9$
9. $-1, 0, \frac{1}{2}$
10. $-2, -\frac{1}{3}, 5$

Ordering Real Numbers **In Exercises 11–16, plot each real number as a point on the real number line and place the correct inequality symbol (< or >) between the real numbers.**

11. $-\frac{1}{10}$ ▢ 4
12. $\frac{25}{3}$ ▢ $\frac{5}{3}$
13. -3 ▢ -7
14. 10.6 ▢ -3.5
15. 5 ▢ $\frac{7}{2}$
16. $\frac{3}{8}$ ▢ $\frac{4}{9}$

Using Absolute Value **In Exercises 17–20, find the distance between a and zero on the real number line.**

17. $a = 152$
18. $a = -10.4$
19. $a = -\frac{7}{3}$
20. $a = \frac{2}{3}$

Evaluating an Absolute Value **In Exercises 21–28, evaluate the expression.**

21. $|-8.5|$
22. $|-9.6|$
23. $|3.4|$
24. $|5.98|$
25. $-|-6.2|$
26. $-\left|-\frac{7}{9}\right|$
27. $-\left|\frac{8}{5}\right|$
28. $-|4|$

Comparing Real Numbers **In Exercises 29–34, place the correct symbol (<, >, or =) between the real numbers.**

29. $|-84|$ ▢ $|84|$
30. $|-10|$ ▢ $|4|$
31. $\left|\frac{5}{2}\right|$ ▢ $\left|\frac{8}{9}\right|$
32. $-|-1.8|$ ▢ $|5.7|$
33. $\left|\frac{3}{10}\right|$ ▢ $-\left|\frac{4}{5}\right|$
34. $|2.3|$ ▢ $-|2.3|$

Distance on the Real Number Line **In Exercises 35–38, find all real numbers whose distance from a is given by d.**

35. $a = 5, d = 7$
36. $a = -1, d = 4$
37. $a = 2.6, d = 5$
38. $a = -3, d = 6.5$

1.2

Adding Integers Using a Number Line **In Exercises 39–42, find the sum and demonstrate the addition on the real number line.**

39. $4 + 3$
40. $15 + (-6)$
41. $-1 + (-4)$
42. $-6 + (-2)$

Adding Integers **In Exercises 43–52, find the sum.**

43. $16 + (-5)$
44. $25 + (-10)$
45. $-125 + 30$
46. $-54 + 12$
47. $-13 + (-76)$
48. $-24 + (-25)$
49. $-10 + 21 + (-6)$
50. $-23 + 4 + (-11)$
51. $-17 + (-3) + (-9)$
52. $-16 + (-2) + (-8)$

53. ***Profit*** A small software company had a profit of \$95,000 in January, a loss of \$64,400 in February, and a profit of \$51,800 in March. What was the company's overall profit (or loss) for the three months?

54. ***Account Balance*** At the beginning of a month, your account balance was $3090. During the month, you withdrew $870 and $465, deposited $109, and earned $10.05 in interest. What was your balance at the end of the month?

Subtracting Integers **In Exercises 55–64, find the difference.**

55. $28 - 7$
56. $43 - 12$
57. $8 - 15$
58. $17 - 26$
59. $14 - (-19)$
60. $28 - (-4)$
61. $-18 - 4$
62. $-37 - 14$
63. $-12 - (-7) - 4$
64. $-26 - (-8) - (-10)$

65. ***Account Balance*** At the beginning of a month, your account balance was $1560. During the month, you withdrew $50, $255, and $490. What was your balance at the end of the month?

66. ***Gasoline Prices*** At the beginning of a month, gas cost $4.14 per gallon. During the month, the price increased by $0.05 and $0.02, decreased by $0.10, and then increased again by $0.07. How much did gas cost at the end of the month?

1.3

Multiplying Integers **In Exercises 67–78, find the product.**

67. $15 \cdot 3$
68. $21 \cdot 4$
69. $-3 \cdot 24$
70. $-2 \cdot 44$
71. $6(-8)$
72. $12(-5)$
73. $-5(-9)$
74. $-10(-81)$
75. $3(-6)(3)$
76. $15(-2)(7)$
77. $-4(-5)(-2)$
78. $-12(-2)(-6)$

79. ***Savings Plan*** You save $150 per month for 2 years. What is the total amount you have saved?

80. ***Average Speed*** A truck drives 65 miles per hour for 5 hours. How far has the truck traveled?

Dividing Integers **In Exercises 81–92, perform the division, if possible. If not possible, state the reason.**

81. $72 \div 8$
82. $63 \div 9$
83. $\frac{-72}{6}$
84. $\frac{-162}{9}$
85. $75 \div (-5)$
86. $48 \div (-4)$
87. $\frac{-52}{-4}$
88. $\frac{-64}{-4}$
89. $0 \div 815$
90. $0 \div 25$
91. $135 \div 0$
92. $26 \div 0$

93. ***Average Speed*** A commuter train travels 195 miles between two cities in 3 hours. What is the average speed of the train in miles per hour?

94. ***Unit Price*** At an auction, you buy a box of six glass canisters for a total of $78. All the canisters are of equal value. How much is each one worth?

Classifying an Integer **In Exercises 95–100, decide whether the number is prime or composite.**

95. 137
96. 296
97. 839
98. 909
99. 1764
100. 1847

Prime Factorization **In Exercises 101–106, write the prime factorization of the number.**

101. 264
102. 195
103. 378
104. 858
105. 1612
106. 1787

Using a Rule or Definition **In Exercises 107–110, complete the statement using the indicated definition or rule.**

107. Rule for multiplying integers with unlike signs:
$12 \times (-3) =$ ____

108. Definition of multiplication:
$(-4) + (-4) + (-4) =$ ____

109. Definition of absolute value:
$|-7| =$ ____

110. Rule for adding integers with unlike signs:
$-9 + 5 =$ ____

1.4

Finding the GCF **In Exercises 111–116, find the greatest common factor.**

111. 54, 90
112. 154, 220
113. 2, 6, 9
114. 8, 12, 24
115. 63, 84, 441
116. 99, 132, 253

Writing a Fraction in Simplest Form **In Exercises 117–120, write the fraction in simplest form.**

117. $\frac{3}{12}$ 118. $\frac{15}{25}$

119. $\frac{30}{48}$ 120. $\frac{126}{162}$

Writing an Equivalent Fraction **In Exercises 121–124, write an equivalent fraction with the indicated denominator.**

121. $\frac{2}{3} = \frac{\square}{15}$ 122. $\frac{3}{7} = \frac{\square}{28}$

123. $\frac{6}{10} = \frac{\square}{25}$ 124. $\frac{9}{12} = \frac{\square}{16}$

Adding and Subtracting Fractions **In Exercises 125–138, find the sum or difference. Write the result in simplest form.**

125. $\frac{3}{25} + \frac{7}{25}$ 126. $\frac{9}{64} + \frac{7}{64}$

127. $\frac{27}{16} - \frac{15}{16}$ 128. $-\frac{5}{12} + \frac{1}{12}$

129. $\frac{3}{8} + \frac{1}{2}$ 130. $\frac{7}{12} + \frac{5}{18}$

131. $-\frac{5}{9} + \frac{2}{3}$ 132. $\frac{7}{15} - \frac{2}{25}$

133. $-\frac{25}{32} + \left(-\frac{7}{24}\right)$ 134. $-\frac{7}{8} - \frac{11}{12}$

135. $5 - \frac{15}{4}$ 136. $\frac{12}{5} - 3$

137. $5\frac{3}{4} - 3\frac{5}{8}$ 138. $-3\frac{7}{10} + 1\frac{1}{20}$

139. ***Meteorology*** The table shows the daily amounts of rainfall (in inches) during a five-day period. What was the total amount of rainfall for the five days?

Day	Mon	Tue	Wed	Thu	Fri
Rainfall (in inches)	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{8}$	$1\frac{1}{4}$	$\frac{1}{2}$

140. ***Fuel Consumption*** The morning and evening readings of the fuel gauge on a car were 7/8 and 1/3, respectively. What fraction of the tank of fuel was used that day?

Multiplying and Dividing Fractions **In Exercises 141–154, evaluate the expression and write the result in simplest form. If it is not possible, explain why.**

141. $\frac{5}{8} \cdot \frac{-2}{15}$ 142. $\frac{3}{32} \cdot \frac{32}{3}$

143. $35\left(\frac{1}{35}\right)$ 144. $-6\left(\frac{5}{36}\right)$

145. $\frac{3}{8}\left(-\frac{2}{27}\right)$ 146. $-\frac{5}{12}\left(-\frac{4}{25}\right)$

147. $\frac{5}{14} \div \frac{15}{28}$ 148. $-\frac{7}{10} \div \frac{4}{15}$

149. $-\frac{3}{4} \div \left(-\frac{7}{8}\right)$ 150. $\frac{15}{32} \div \left(-\frac{5}{4}\right)$

151. $-\frac{5}{9} \div 0$ 152. $0 \div \frac{1}{12}$

153. $-5 \cdot 0$ 154. $0 \cdot \frac{1}{2}$

155. ***Meteorology*** During an eight-hour period, $6\frac{3}{4}$ inches of snow fell. What was the average rate of snowfall per hour?

156. ***Sports*** In three strokes on a golf course, you hit your ball a total distance of $64\frac{7}{8}$ meters. What is your average distance per stroke?

Operations with Decimals **In Exercises 157–164, evaluate the expression. Round your answer to two decimal places.**

157. $4.89 + 0.76$ 158. $1.29 + 0.44$

159. $3.815 - 5.19$ 160. $7.234 - 8.16$

161. $1.49(-0.5)$ 162. $2.34(-1.2)$

163. $5.25 \div 0.25$ 164. $10.18 \div 1.6$

165. ***Consumer Awareness*** An engagement ring is advertised for \$299.99 plus \$26.99 per month for 24 months. Find the total cost of the engagement ring.

166. ***Consumer Awareness*** A plasma television costs \$599.99 plus \$32.96 per month for 18 months. Find the total cost of the television.

1.5

Writing an Expression in Exponential Form **In Exercises 167–170, rewrite the expression in exponential form.**

167. $6 \cdot 6 \cdot 6 \cdot 6 \cdot 6$

168. $(-3) \cdot (-3) \cdot (-3)$

169. $\left(\frac{6}{7}\right) \cdot \left(\frac{6}{7}\right) \cdot \left(\frac{6}{7}\right) \cdot \left(\frac{6}{7}\right)$

170. $-[(3.3) \cdot (3.3)]$

Evaluating an Exponential Expression **In Exercises 171–176, evaluate the expression.**

171. 2^4 172. $(-6)^2$

173. $\left(-\frac{3}{4}\right)^3$ 174. $\left(\frac{2}{3}\right)^2$

175. -7^2 176. $-(-3)^3$

Using Order of Operations **In Exercises 177–196, evaluate the expression. Write fractional answers in simplest form.**

177. $12 - 2 \cdot 3$

178. $1 + 7 \cdot 3 - 10$

179. $18 \div 6 \cdot 7$

180. $3^2 \cdot 4 \div 2$

181. $20 + (8^2 \div 2)$

182. $(8 - 3) \div 15$

183. $240 - (4^2 \cdot 5)$

184. $5^2 - (625 \cdot 5^2)$

185. $3^2(5 - 2)^2$

186. $-5(10 - 7)^3$

187. $\frac{3}{4}\left(\frac{5}{6}\right) + 4$

188. $75 - 24 \div 2^3$

189. $122 - [45 - (32 + 8) - 23]$

190. $-58 - (48 - 12) - (-30 - 4)$

191. $\dfrac{6 \cdot 4 - 36}{4}$

192. $\dfrac{144}{2 \cdot 3 \cdot 3}$

193. $\dfrac{54 - 4 \cdot 3}{6}$

194. $\dfrac{3 \cdot 5 + 125}{10}$

195. $\dfrac{78 - |-78|}{5}$

196. $\dfrac{300}{15 - |-15|}$

Using a Calculator **In Exercises 197–200, use a calculator to evaluate the expression. Round your answer to two decimal places.**

197. $(5.8)^4 - (3.2)^5$

198. $\dfrac{(15.8)^3}{(2.3)^8}$

199. $\dfrac{3000}{(1.05)^{10}}$

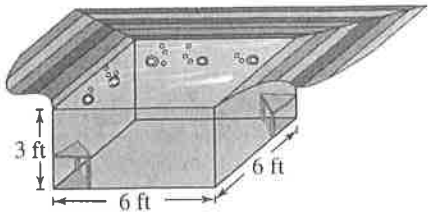
200. $500\left(1 + \dfrac{0.07}{4}\right)^{40}$

201. ***Depreciation*** After 3 years, the value of a \$25,000 car is given by $25{,}000\left(\frac{3}{4}\right)^3$.

(a) What is the value of the car after 3 years?

(b) How much has the car depreciated during the 3 years?

202. ***Geometry*** The volume of water in a hot tub is given by $V = 6^2 \cdot 3$ (see figure). How many cubic feet of water will the hot tub hold? Find the total weight of the water in the tub. (Use the fact that 1 cubic foot of water weighs 62.4 pounds.)



Identifying a Property of Real Numbers **In Exercises 203–210, identify the property of real numbers illustrated by the statement.**

203. $123 - 123 = 0$

204. $9 \cdot \frac{1}{9} = 1$

205. $14(3) = 3(14)$

206. $5(3 \cdot 8) = (5 \cdot 3)8$

207. $17 \cdot 1 = 17$

208. $10 + 6 = 6 + 10$

209. $-2(7 + 12) = (-2)7 + (-2)12$

210. $2 + (3 + 19) = (2 + 3) + 19$

Using a Property of Real Numbers **In Exercises 211–214, complete the statement using the specified property of real numbers.**

211. Additive Identity Property:

$-16 + 0 =$ ____

212. Distributive Property:

$8(7 + 2) =$ ____

213. Commutative Property of Addition:

$24 + 1 =$ ____

214. Associative Property of Multiplication:

$8(5 \cdot 7) =$ ____

215. ***Geometry*** Find the area of the shaded rectangle in two ways. Explain how the results are related to the Distributive Property.