

16.9.15 Real Numbers

Providence - 5000

Homework Check.

30. $-2.75 = -2 \frac{75}{100} = -2 \frac{3}{4}$

33. $3.25 = 3 \frac{1}{4} = \frac{13}{4}$

36. -2.32

$\hookrightarrow = -2 \frac{32}{100} = -2 \frac{8}{25} = -\frac{58}{25}$

Practice:

Write each repeating decimal using bar notation.

38. $0.31313...$

39. $0.666...$

40. $0.9555...$

41. $5.6161...$

42. $32.42874287...$

43. $-18.5252...$

38) $0.31313...$

$= 0.\overline{31}$ Period length of 2
Period = 31

40) $0.95555...$

$= 0.9\overline{5}$
period = 5
period length is 1

Write as a decimal.

44. $\frac{2}{3}$

45. $-\frac{7}{8}$

46. $\frac{9}{2}$

47. $-\frac{5}{12}$

48. $-\frac{11}{5}$

49. $\frac{4}{11}$

50. $\frac{3}{7}$

51. $-\frac{7}{9}$

52. $-\frac{7}{20}$

44: $\frac{2}{3} = 0.\overline{6}$

45: $-\frac{7}{8} = -0.875$

Identify the period and the length of the period of each rational number.

53. $\frac{2}{9}$

54. $\frac{7}{11}$

55. $-\frac{1}{6}$

56. $-\frac{1}{3}$

57. $\frac{5}{6}$

58. $-\frac{7}{12}$

Replace each

53. $\frac{2}{9} = 0.\overline{2}$

the thing
repeats
↓
Period = 2

Period length = 1

54. $\frac{7}{11} = 0.\overline{63}$

Period: 63

Period length: 2

55. $-\frac{1}{6} = -0.1\overline{6}$ period is 6 | period length = 1

Replace each $\bullet$ with $<$, $>$, or $=$ to make each statement true.

59. $\frac{1}{2} \bullet \frac{3}{4}$

60. $\frac{-3}{5} \bullet \frac{-2}{5}$

61. $\frac{8}{3} \bullet 2\frac{2}{3}$

62. $\frac{-2}{3} \bullet \frac{-3}{4}$

63. $\frac{11}{12} \bullet \frac{5}{6}$

64. $\frac{3}{-4} \bullet \frac{-1}{8}$

12 $\frac{10}{-15}$ ^{easy}

greater than
less than

59) $\frac{1}{2} < \frac{3}{4}$ | 62) $\frac{-2}{3} > \frac{-3}{4}$
 $-0.6 > -0.75$

Replace each $\bullet$ with $<$, $>$, or $=$ to make each statement true.

65. $0.3 \bullet 0.\bar{3}$

66. $0.007 \bullet 0.07$

67. $1.21 \bullet 1\frac{21}{100}$

68. $0.\bar{61} \bullet \frac{3}{5}$

69. $-\frac{7}{8} \bullet -0.875$

70. $5\frac{1}{3} \bullet 5.\bar{3}$

65) $0.3 < 0.\bar{3}$

67) $1.21 = 1\frac{21}{100} = 1.21$

69) $-\frac{7}{8} = -0.875$

$-\frac{8}{12} > -\frac{9}{12}$

Write in order from least to greatest.

75. $\frac{1}{2}, \frac{1}{3}, \frac{3}{5}, 0.59$

write as decimals 0.5, 0.3, 0.6, 0.59
IN ORDER

76. $0.71, 0.7\bar{1}, \frac{711}{1000}, 0.7$

0.3, 0.5, 0.59, 0.60

77. $-9.01, -8.93, -9.\bar{1}, -8.\bar{9}$

78. $0.113, 0.\overline{113}, 0.1\overline{13}, 0.\bar{1}$

79. $\frac{3}{8}, -\frac{4}{7}, 0.3\bar{7}, 0.3\overline{75}$

76) IN ORDER

0.71, 0.711, 0.71, 0.7

Applications and Problem Solving

80. Write an example of a rational number

a) with a numerator of 1 and a denominator greater than 5

b) with a numerator less than -3 and a denominator greater than 0

c) with a denominator of -16 and a numerator that makes a rational number in lowest terms

a) $\frac{1}{7}$

b) $-\frac{5}{6}$

c) $\frac{-15}{-16}$

