DECIMALS

Comparing Decimals

EXAMPLE | Which is greater: 0.5 or 0.496?

To make 0.5 and 0.496 easier to compare, we write zeros at the end of 0.5 so that both numbers have digits in the same place values:

$$0.5 = 0.500.$$

Then, we write each of 0.500 and 0.496 as fractions:

$$0.500 = \frac{500}{1,000} \quad \text{and} \quad 0.496 = \frac{496}{1,000}.$$

Since $\frac{500}{1,000} > \frac{496}{1,000}$, we have $0.500 > 0.496$.

So, **0.5** is greater than 0.496.

PRACTICE | Place <, >, or = in each circle below to compare each pair of decimals.

72. 0.4 ◯ 0.789

73. 0.151 ◯ 1.49

74. 1.524 ◯ 1.53

75. 5.914 ◯ 5.91

76. 0.064 ◯ 0.64

77. 7.003 ◯ 7.0003

78. Circle the largest decimal number below.

0.342   0.243   0.234   0.432   0.342   0.423

79. Circle the smallest decimal number below.

0.02   0.003   0.3   0.002   0.03   0.2

80. Circle the two decimals below that are equal.

0.78   0.078   0.708   0.807   0.780   0.87

DECIMALS

Comparing Decimals

EXAMPLE | Order the following from greatest to least: 0.29, 0.3, 0.045, 0.92, 0.05.

To compare decimals, we first line up the decimal points as shown on the right. This allows us to compare decimals in the same way that we compare whole numbers: we compare digits in place values from left to right.

0.29
0.3
0.045
0.92
0.05

All five numbers have a 0 in the ones place. So, we compare digits in the tenths place.

0.92 has the most tenths, so 0.92 is the greatest.

0.3 has the second-most tenths, and 0.29 has the third-most tenths.

0.92
0.3
0.29
0.045
0.05

We can compare decimals without converting them to fractions!

The remaining numbers are 0.05 and 0.045. Both have a 0 in the tenths place, so we compare their hundredths digits.
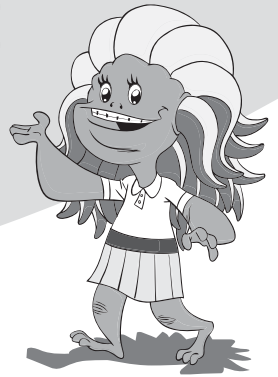
Since 0.05 has more hundredths than 0.045, we know 0.05>0.045.

From greatest to least, we have:

0.920
0.300
0.290
0.050
0.045

0.92 > 0.3 > 0.29 > 0.05 > 0.045.

This ordering is made more obvious by filling empty place values with 0's as shown to the right above.

PRACTICE | Order each set of decimals below from greatest to least on the given lines.

81. 1.70 _____
0.17
7.10 _____
1.07

_____

_____

82. 0.409 _____
0.0494
0.044 _____
0.49

_____

_____

83. 1.21, 1.12, 1.021, 1.102

_____

_____

_____

_____

84. 0.675, 0.657, 0.75, 0.6705

_____

_____

_____

_____

Decimal Path Puzzles

EXAMPLE

Trace a path in the hexagonal grid below that crosses all the numbers on the grid in order from least to greatest.

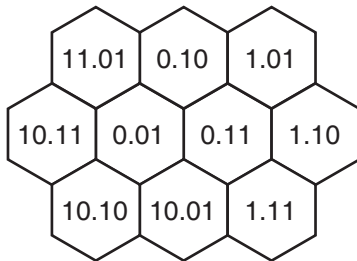| 0.05 | 555 | 55.55 |
| 0.55 | 0.5 | 5.55 | 55.5 |
| 5.05 | 5.5 | 55 |

We begin by circling the smallest number on the grid, 0.05. Then, we move from hexagon to hexagon, always connecting to the next-smallest number. We finish at the largest number on the grid, 555.
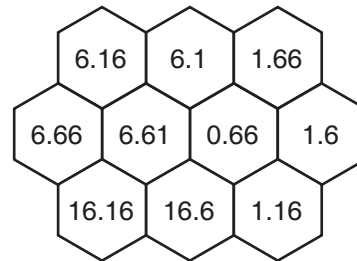
0.05	555	55.55
0.55	0.5	5.55	55.5
5.05	5.5	55

PRACTICE

Trace a path in each hexagonal grid below that crosses all the numbers on the grid in order from least to greatest.

85.

11.01	0.10	1.01
10.11	0.01	0.11	1.10
10.10	10.01	1.11

86.

6.16	6.1	1.66
6.66	6.61	0.66	1.6
16.16	16.6	1.16

87.

0.15	5.10	5.15
1.15	1.05	5.01	5.55
1.50	1.51	1.55

88.

0.35	0.4	0.401
0.54	0.46	0.45	0.405
0.49	0.44	0.41

Decimal Path Puzzles

DECIMALS
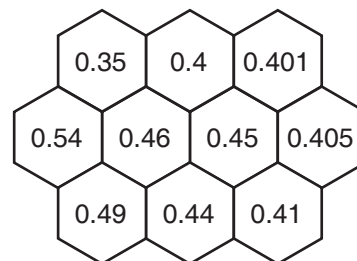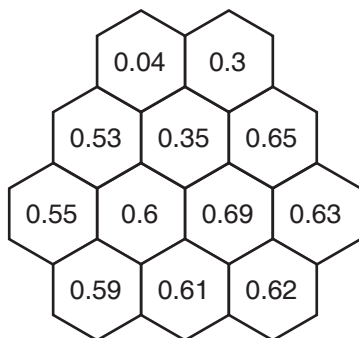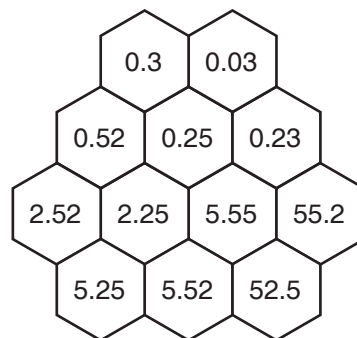
PRACTICE | Trace a path in each hexagonal grid below that crosses all the numbers on the grid in order from least to greatest.
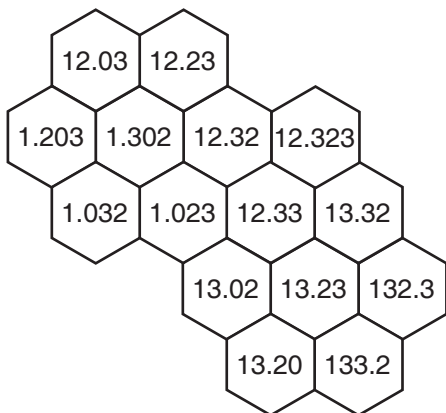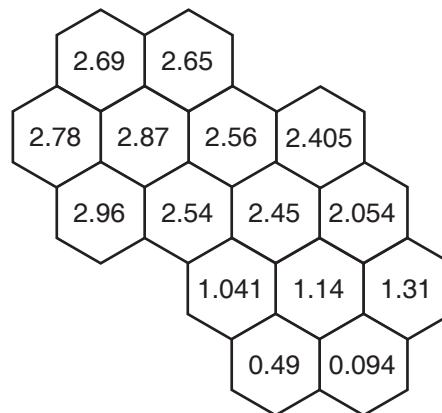
89.

0.04	0.3
0.53	0.35	0.65
0.55	0.6	0.69	0.63
0.59	0.61	0.62

90.

0.3	0.03
0.52	0.25	0.23
2.52	2.25	5.55	55.2
5.25	5.52	52.5

91.

12.03	12.23
1.203	1.302	12.32	12.323
1.032	1.023	12.33	13.32
13.02	13.23	132.3
13.20	133.2

92.

2.69	2.65
2.78	2.87	2.56	2.405
2.96	2.54	2.45	2.054
1.041	1.14	1.31
0.49	0.094

93.

7.11	7.07
11.17	11.11	7.17	7.071	1.77
11.77	17.17	11.07	7.71	1.71
17.01	17.71	11.01	77.77
17.77	71.71	71.77
71.11	71.17