NAEP Released Items Aligned to the Iowa Core

8.NS.1 Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.

8.NS.2 Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π2). For example, by truncating the decimal expansion of √2, show that √2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.

$\sqrt{17}$ is between which of the following pairs of numbers?

A. 4 and 5
B. 8 and 9
C. 16 and 18
D. 288 and 290

2004-17-23-21

Source: National Assessment of Educational Progress, 2004, Age 17 Mathematics Assessment.

How many integers are there between $\sqrt{15}$ and $\sqrt{63}$?

A. Three
B. Four
C. Five
D. Six
E. Seven

1990-12-9-16

Source: National Assessment of Educational Progress, 1990, Grade 12 Mathematics Assessment.

$\sqrt{19}$ is between which of the following pairs of numbers?

A. 4 and 5
B. 9 and 10
C. 18 and 20
D. 360 and 362

2008-17-21-13

Source: National Assessment of Educational Progress, 2008, Age 17 Mathematics Assessment.
