

8.NS.A.2 Comparing Real Numbers – II

8.NS.A.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

1. Use $>$ or $<$ to write a true sentence:
11 _____ 71
2. Compare: $105 \bigcirc 406$
3. Which of the following is a true statement?
[A] $618 > 189$ [B] $981 < 967$
[C] $139 > 603$ [D] $808 < 486$
4. If you put the numbers 246, 248, 256, and 253 in order from smallest to largest, which number would be fourth?
[A] 253 [B] 256 [C] 248 [D] 246
5. Order the numbers 519, 951, and 159 from least to greatest.
[A] 519, 951, 159 [B] 159, 519, 951
[C] 951, 159, 519 [D] 519, 159, 159
6. Order the numbers 169, 961, and 619 from least to greatest.
7. Compare: $13,363 \bigcirc 46,943$
8. Compare: $-7 \bigcirc -1$
9. Compare: $-5 \bigcirc -6$
[A] not given [B] $>$ [C] $=$ [D] $<$
10. Name a point between -3 and -4 on a number line.
11. (a) Arrange these numbers in order from greatest to least:
 $0, 3, -3, \frac{1}{3}$
(b) List the numbers in part (a) that are not integers.
12. If $\frac{23}{8}, \frac{11}{2}, \frac{9}{6}$, and $\frac{15}{7}$ are placed in order from least to greatest, which would be first?
[A] $\frac{9}{6}$ [B] $\frac{15}{7}$ [C] $\frac{23}{8}$ [D] $\frac{11}{2}$
13. Insert $=$, $<$, or $>$ to make a true statement:
 $-\frac{1}{2}$ [?] $-\frac{2}{3}$.
14. Which of the following is *not* a true statement?
[A] $32.18 = 32.1800000$
[B] $24.30009 < 24.31$
[C] $32.7400 > 32.74$ [D] $29.337 > 29.327$
15. $\sqrt{355}$ and 6π
Which number is *smaller*? Show how you arrived at your answer.
16. Use the three digits 2, 8, and 6 once each to make an even number less than 600.

8.NS.A.2 Comparing Real Numbers – II

8.NS.A.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

17. Write twenty-eight is less than forty with numbers and a comparison symbol.

18. Compare the quantities in Column A and Column B.

Column A

Column B

ab if $0 < a < 1$ and $b < 0$ ab if $-1 < a < 0$ and $b > 0$

[A] The quantity in Column A is greater.

[B] The quantity in Column B is greater.

[C] The quantities are equal.

[D] The relationship cannot be determined from the information given.

19. Use digits and symbols to write “Negative two is greater than negative four.”

20. Compare: $21 + 7 \bigcirc 20 + 8$

Compare:

21. $24 \times 6 \bigcirc 22 - 10$

22. $6 \times 8 \times 4 + 2 - 3 \bigcirc (12 - 6) \times (4 + 2 - 3)$ [A] none of these [B] = [C] > [D] <

23. Write <, >, or = between the two expressions to make a true statement. $(7 \times 3) \div (9 + 3 - 9)$ _____
 $7 \times 3 \div 9 + 3 - 9$

[A] >

[B] =

[C] <

24. Use digits and symbols to compare 2 plus 1 to 2 times 1.

25. Use digits and symbols to write “The product of two and one is less than the sum of two and one.”

8.NS.A.2 Comparing Real Numbers – II

Answer Key

8.NS.A.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

[1] $11 < 71$

[2] $105 < 406$

[3] A

[4] B

[5] B

[6] 169, 619, 961

[7] $13,363 < 46,943$

[8] $<$

[9] B

[10] Answers may vary. Sample: -3.5

[11] (a) $3, \frac{1}{3}, 0, -3$ (b) $\frac{1}{3}$

[12] A

[13] $-\frac{1}{2} > -\frac{2}{3}$

[14] C

[15] $\sqrt{355} \approx 18.84$ and $6\pi \approx 18.85$ so $\sqrt{355}$ is smaller.

[16] 268 or 286

[17] $28 < 40$

[18] D

[19] $-2 > -4$

[20] $21 + 7 = 20 + 8$

[21] $>$

[22] C

[23] A

[24] $2 + 1 > 2 \times 1$

[25] $2 \times 1 < 2 + 1$