

NUMBERS OPERATIONS AND PROPERTIES: Classifying Numbers

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NAME: \_\_\_\_\_

1. 080208a, P.I. 7.N.17

The number 0.14114111411114 . . . is

[A] rational [B] whole  
[C] integral [D] irrational

2. 010632a, P.I. 7.N.2

Write an irrational number and explain why it is irrational.

3. 069923a, P.I. 7.N.2

Which number below is irrational?

$$\sqrt{\frac{4}{9}}, \sqrt{20}, \sqrt{121}$$

Why is the number you chose an irrational number?

4. 010416a, P.I. 7.N.2

Which number is irrational?

[A]  $\sqrt{8}$  [B]  $\sqrt{9}$  [C]  $\frac{2}{3}$  [D] 0.3333

5. 060303a, P.I. 7.N.2

Which expression represents an irrational number?

[A]  $\sqrt{2}$  [B] 0 [C]  $\frac{1}{2}$  [D] 0.17

6. 010219a, P.I. 7.N.2

Which is an irrational number?

[A] 3.14 [B]  $\sqrt{3}$  [C]  $\sqrt{9}$  [D]  $\frac{3}{4}$

7. 060211a, P.I. 7.N.2

Which is an irrational number?

[A]  $\pi$  [B] 0 [C]  $-\frac{1}{3}$  [D]  $\sqrt{9}$

8. 080523a, P.I. 7.N.2

Which is an irrational number?

[A]  $\pi$  [B]  $0.\bar{3}$  [C]  $\frac{3}{8}$  [D]  $\sqrt{49}$

9. 080718a, P.I. 7.N.2

Which number is irrational?

[A]  $\pi$  [B]  $\frac{5}{4}$  [C]  $0.\bar{3}$  [D]  $\sqrt{121}$

10. 080432a, P.I. 7.N.2

Given:  $\frac{\sqrt{99}}{11}$ ,  $\sqrt{164}$ ,  $\sqrt{196}$

Identify the expression that is a rational number and explain why it is rational.

11. 060813b, P.I. 7.N.2

The value of  $\sqrt{x^2 - 9}$  is a real and irrational number when  $x$  is equal to

[A] 5 [B] 0 [C] 4 [D] -3

12. 060003a, P.I. 7.N.2

Which number is rational?

[A]  $\frac{5}{4}$  [B]  $\pi$  [C]  $\sqrt{\frac{3}{2}}$  [D]  $\sqrt{7}$

13. 060120a, P.I. 7.N.2

Which is a rational number?

[A]  $5\sqrt{9}$  [B]  $6\sqrt{2}$  [C]  $\sqrt{8}$  [D]  $\pi$

14. 080102a, P.I. 7.N.2

Which expression is rational?

[A]  $\sqrt{3}$  [B]  $\pi$  [C]  $\sqrt{\frac{1}{2}}$  [D]  $\sqrt{\frac{1}{4}}$

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[1] D \_\_\_\_\_

[2] An irrational number is written, and an appropriate explanation is written, such as an irrational number cannot be written as a fraction or as a repeating or terminating decimal.

[1] An irrational number is written, such as  $\pi$  or the square root of a nonperfect square, but no explanation or an inappropriate explanation is written.

or [1] A correct definition of an irrational number is written, but the example is missing or is inappropriate.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[2] incorrect procedure.

[2]  $\sqrt{20}$  and an appropriate explanation is given, such as the number cannot be written as a repeating or terminating decimal or it cannot be written as a fraction or it is not a perfect square.

[1]  $\sqrt{20}$  and an inappropriate explanation or no explanation is given.

or [1]  $\sqrt{20}$  and a correct explanation is given, but one other number is also identified as irrational.

[0] All three numbers are identified as irrational.

or [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an

[3] obviously incorrect procedure.

[4] A \_\_\_\_\_

[5] A \_\_\_\_\_

[6] B \_\_\_\_\_

[7] A \_\_\_\_\_

[8] A \_\_\_\_\_

[9] A \_\_\_\_\_

[2]  $\sqrt{196}$ , and an appropriate explanation is given.

[1] An incorrect answer is chosen, but an appropriate explanation is given.

or [1]  $\sqrt{196}$ , but no explanation or an incorrect explanation is given.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[10] incorrect procedure.

[11] C \_\_\_\_\_

[12] A \_\_\_\_\_

[13] A \_\_\_\_\_

[14] D \_\_\_\_\_