

Section 12-2: Radicals and the Irrational Numbers

Basic Rules for Radicals That Are Irrational Numbers

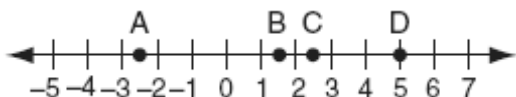
1. 010001a, P.I. 7.N.18

The expression $\sqrt{93}$ is a number between

- [A] 3 and 9 [B] 46 and 47
[C] 9 and 10 [D] 8 and 9

2. 010703a, P.I. 7.N.18

Which point on the accompanying number line best represents the position of $\sqrt{5}$?



- [A] A [B] D [C] C [D] B

3. 060003a, P.I. 7.N.2

Which number is rational?

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

4. 080102a, P.I. 7.N.2

Which expression is rational?

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

5. 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?

6. 060502a

The amount of time, t , in seconds, it takes an object to fall a distance, d , in meters, is

expressed by the formula $t = \sqrt{\frac{d}{4.9}}$.

Approximately how long will it take an object to fall 75 meters?

- [A] 0.26 sec [B] 3.9 sec
[C] 2.34 sec [D] 7.7 sec

[1] C

[2] C

[3] A

[4] B

[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

[5] obviously incorrect procedure.

[6] B