

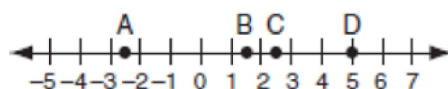
8.NS.A.2 Approximate Square Roots

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

- | | |
|------------|--------------|
| 1) 3 and 9 | 3) 9 and 10 |
| 2) 8 and 9 | 4) 46 and 47 |

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



- | | |
|------|------|
| 1) A | 3) C |
| 2) B | 4) D |

3 The expression $\sqrt{54 - b}$ is equivalent to a positive integer when b is equal to

- | | |
|--------|-------|
| 1) -10 | 3) 16 |
| 2) 54 | 4) 4 |

4 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?

- | | |
|-------------|------------|
| 1) 0.26 sec | 3) 3.9 sec |
| 2) 2.34 sec | 4) 7.7 sec |

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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 ANS: 3

The $\sqrt{93}$ is between the $\sqrt{81}$ and $\sqrt{100}$, so it is between 9 and 10.

2 ANS: 3

3 ANS: 1

$$\sqrt{54 - (-10)} = \sqrt{64} = 8$$

4 ANS: 3

$$t = \sqrt{\frac{d}{4.9}} = \sqrt{\frac{75}{4.9}} \approx 3.9$$