

**SMART EXAM RESOURCES**  
**STAGE 9 MATHEMATICS**  
**TOPIC QUESTIONS**  
**TOPIC: ESTIMATING SURDS**  
**SET-1**

1. Estimate  $\sqrt{50}$  to one decimal place.

**Solution:1**

We know that  $\sqrt{49} = 7$  and  $\sqrt{64} = 8$ .

Since 50 is between 49 and 64, we estimate  $\sqrt{50}$  to be slightly more than 7.

Use a calculator for a more precise estimate:

$$\sqrt{50} \approx 7.071.$$

Answer:  $\sqrt{50} \approx 7.1$ .

2. Estimate  $\sqrt{18}$  to one decimal place.

Solution 2:

We know that  $\sqrt{16} = 4$  and  $\sqrt{25} = 5$ .

Since 18 is closer to 16, we estimate  $\sqrt{18}$  to be slightly more than 4.

Use a calculator for a more precise estimate:

$$\sqrt{18} \approx 4.242.$$

Answer:  $\sqrt{18} \approx 4.2$ .

**3. Estimate  $\sqrt{200}$  to one decimal place.**

**Solution :3**

We know that  $\sqrt{196} = 14$  and  $\sqrt{225} = 15$ .

Since 200 is closer to 196, we estimate  $\sqrt{200}$  to be slightly more than 14.

Use a calculator for a more precise estimate:

$\sqrt{200} \approx 14.142$ .

Answer:  $\sqrt{200} \approx 14.1$ .

4. Estimate  $\sqrt{35}$  to one decimal place.

Solution: 4

We know that  $\sqrt{25} = 5$  and  $\sqrt{36} = 6$ .

Since 35 is closer to 36, we estimate  $\sqrt{35}$  to be slightly less than 6.

Use a calculator for a more precise estimate:

$\sqrt{35} \approx 5.916$ .

Answer:  $\sqrt{35} \approx 5.9$ .



5. Estimate  $\sqrt{75}$  to one decimal place.

Solution:

We know that  $\sqrt{64} = 8$  and  $\sqrt{81} = 9$ .

Since 75 is closer to 81, we estimate  $\sqrt{75}$  to be slightly less than 9.

Use a calculator for a more precise estimate:

$\sqrt{75} \approx 8.660$ .

Answer:  $\sqrt{75} \approx 8.7$ .