Estimating Roots

ANSWERS

1

Between which two whole numbers is $\sqrt{21}$?

$4^2 = 16 < 21 < 25 = 5^2$

Between 4 and 5

2

Between which two whole numbers is $\sqrt{43}$?

$6^2 = 36 < 43 < 49 = 7^2$

Between 6 and 7

3

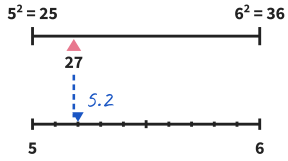
Between which two whole numbers is $\sqrt{33}$?

$5^2 = 25 < 33 < 36 = 6^2$

Between 5 and 6

4

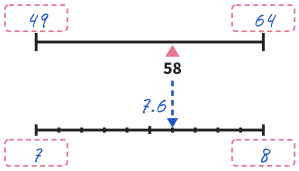
Estimate $\sqrt{27}$ to 1 decimal place.



Answer 5.2

5

Estimate $\sqrt{58}$ to 1 decimal place.



Answer 7.6

6

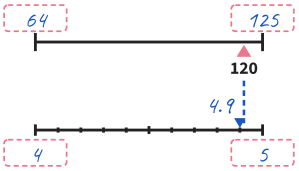
Between which two whole numbers is $\sqrt[3]{45}$?

$3^3 = 27 < 45 < 64 = 4^3$

Between 3 and 4

7

Estimate $\sqrt[3]{120}$ to 1 decimal place.



Answer 4.9

8

Sam says $\sqrt{72}$ is about 36, because $36 \times 2 = 72$. What has Sam done wrong?

Sam has halved 72.

36^2 = 1296, not 72.

$8^2 = 64$, $9^2 = 81$, so $\sqrt{72}$ is between 8 and 9.

Estimating Roots *further practice*

ANSWERS

9

Between which two whole numbers is $\sqrt{150}$?

Between 12 and 13

10

Estimate $\sqrt{66}$ to 1 decimal place.

Answer 8.1

11

Estimate $\sqrt[3]{150}$ to 1 decimal place.

Answer 5.3

12

A square garden has an area of 62 m^2. Estimate the length of one side to 1 decimal place.

Answer 7.9 m

13

A box in the shape of a cube has a volume of 180 cm^3.
Estimate the length of one edge to 1 decimal place.

Answer 5.6 cm

14

Which is bigger, $\sqrt{35}$ or 5.8?
Show how you know.

Bigger $\sqrt{35}$: $5.8^2 = 33.64$

15

Write these in order, smallest first.
$\sqrt{38}$ 6.2 $\sqrt[3]{230}$

Order $\sqrt[3]{230}$, $\sqrt{38}$, 6.2

16

$\sqrt{n}$ is between 5 and 6, and n is a whole number. How many different values can n take? Explain.

Answer 10: from 26 to 35