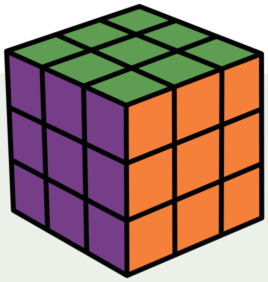
Name ______________________________ Date ____________________

Approximating Cube Roots



If you have a number that's not a perfect cube, you can approximate its cube root by finding the two whole numbers that the cube root falls between.

Try it! Approximate $\sqrt[3]{290}$.

Since 290 is not a perfect cube, approximate $\sqrt[3]{290}$ by first finding the two nearest perfect cubes. The perfect cube just below 290 is 216. The perfect cube just above 290 is 343.

$$216 < 290 < 343$$

Now, find the cube roots of the perfect cubes.

$$\sqrt[3]{216} < \sqrt[3]{290} < \sqrt[3]{343}$$

Since $\sqrt[3]{216} = 6$ and $\sqrt[3]{343} = 7$, $\sqrt[3]{290}$ must be **between 6 and 7**.

$$6 < \sqrt[3]{290} < 7$$

Approximate each cube root by finding the two whole numbers that it falls between.

1. $\sqrt[3]{16}$ is between __________ and __________ .
2. $\sqrt[3]{5}$ is between __________ and __________ .
3. $\sqrt[3]{59}$ is between __________ and __________ .
4. $\sqrt[3]{325}$ is between __________ and __________ .
5. $\sqrt[3]{380}$ is between __________ and __________ .
6. $\sqrt[3]{110}$ is between __________ and __________ .
7. $\sqrt[3]{134}$ is between __________ and __________ .
8. $\sqrt[3]{460}$ is between __________ and __________ .
9. $\sqrt[3]{553}$ is between __________ and __________ .
10. $\sqrt[3]{902}$ is between __________ and __________ .
11. $\sqrt[3]{793}$ is between __________ and __________ .
12. $\sqrt[3]{699}$ is between __________ and __________ .

Challenge yourself! Approximate $\sqrt[3]{212}$ by finding the two whole numbers that it falls between. Which number do you think $\sqrt[3]{212}$ is closer to? Explain your reasoning.

____

____