Rational or irrational — Square and cube roots

Name: _____ Date: _____

Is each number rational or irrational? Circle one.

1. $\sqrt[3]{343}$ Rational / Irrational

2. $\sqrt{166}$ Rational / Irrational

3. $\sqrt{292}$ Rational / Irrational

4. $\sqrt{324}$ Rational / Irrational

5. $\sqrt[3]{729}$ Rational / Irrational

6. $\sqrt{401}$ Rational / Irrational

Rational or irrational · Square and cube roots — Answer key

1. $\sqrt[3]{343}$: rational — it is exactly 7, and any whole number counts as a fraction over one

2. $\sqrt{166}$: irrational — 166 is not a perfect square, so its root never ends and never repeats

3. $\sqrt{292}$: irrational — 292 is not a perfect square, so its root never ends and never repeats

4. $\sqrt{324}$: rational — it is exactly 18, and any whole number counts as a fraction over one

5. $\sqrt[3]{729}$: rational — it is exactly 9, and any whole number counts as a fraction over one

6. $\sqrt{401}$: irrational — 401 is not a perfect square, so its root never ends and never repeats