NAME_____
DATE_____
CLASS_____

*n*th Roots

Approximate Radicals with a Calculator

Irrational Number	a number that cannot be expressed as a terminating or a repeating decimal

Radicals such as $\sqrt{2}$ and $\sqrt{3}$ are examples of irrational numbers. Decimal approximations for irrational numbers are often used in applications. These approximations can be easily found with a calculator.

Example Approximate $\sqrt[5]{18.2}$ with a calculator.

$\sqrt[5]{18.2} \approx 1.787$

Exercises

Use a calculator to approximate each value to three decimal places.

1. $\sqrt{62}$
2. $\sqrt{1050}$
3. $\sqrt[3]{0.054}$
4. $-\sqrt[4]{5.45}$
5. $\sqrt{5280}$
6. $\sqrt{18{,}600}$
7. $\sqrt{0.095}$
8. $\sqrt[3]{-15}$
9. $\sqrt[5]{100}$
10. $\sqrt[6]{856}$
11. $\sqrt{3200}$
12. $\sqrt{0.05}$
13. $\sqrt{12{,}500}$
14. $\sqrt{0.60}$
15. $-\sqrt[4]{500}$
16. $\sqrt[3]{0.15}$
17. $\sqrt[6]{4200}$
18. $\sqrt{75}$

19. **LAW ENFORCEMENT** The formula $r = 2\sqrt{5L}$ is used by police to estimate the speed r in miles per hour of a car if the length L of the car's skid mark is measures in feet. Estimate to the nearest tenth of a mile per hour the speed of a car that leaves a skid mark 300 feet long.

20. **SPACE TRAVEL** The distance to the horizon d miles from a satellite orbiting h miles above Earth can be approximated by $d = \sqrt{8000h + h^2}$. What is the distance to the horizon if a satellite is orbiting 150 miles above Earth?