

LESSON
11-3**Solving Radical Equations****Practice and Problem Solving: C****Solve each equation.**

1. $\sqrt[3]{4x+1} - 5 = 0$

2. $3\sqrt{x-11} = 18$

3. $\sqrt[4]{10x+11} = 3$

4. $\sqrt[3]{3x} = \sqrt[3]{2x+9}$

5. $x+2 = \sqrt{3x+6}$

6. $(10x-25)^{\frac{1}{2}} = x$

7. $5(6x+1)^{\frac{1}{4}} = 10$

8. $4(7x+18)^{\frac{1}{2}} = 4x$

9. $\sqrt{4x+5} = 3$

10. $\sqrt[3]{x+3} = 2$

11. $\sqrt{x-7} + 9 = 12$

12. $\sqrt[3]{x-6} + 7 = 4$

13. $\sqrt{3x-1} = \sqrt{x+7}$

14. $\sqrt[3]{x+2} - 1 = 4$

Solve.

15. Einstein's theory of relativity states that the mass of an object increases as the object's velocity increases. The mass,
- $m(v)$
- , of an object traveling

with velocity, v , is given by $m(v) = \frac{m_0}{\sqrt{1 - \frac{v^2}{c^2}}}$, where c is the speed of lightand m_0 is the mass of the object at rest. In terms of c , solve for the velocity at which the effective mass, $m(v)$, of the particle has increased to twice its mass at rest, m_0 .
