1. Select the next step in solving the equation.

\[ 5x = 2 + \sqrt{1 - 5x} \]

a. Divide both sides of the equation by 5.
b. Collect like terms.
c. Isolate the radical.
d. Square both sides of the equation.

First, isolate the radical. Then square both sides of the equation.

2. Select the correct root(s) by substituting into the equation.

\[ \sqrt{2x + 8} = x \]

a. \( x = 4 \) and \( x = -2 \)
b. \( x = 4 \)
c. \( x = -2 \) extraneous solution
d. There is no solution.

\[ \sqrt{2(4) + 8} \div 4 = 4 \]
\[ \sqrt{16} \div 4 = 4 \]
\[ 4 = 4 \quad \text{true} \]

\[ \sqrt{2(-2) + 8} \div -2 = -2 \]
\[ \sqrt{4} \div -2 = -2 \]
\[ 2 = -2 \quad \text{false} \]
3. Solve the radical equation and enter the root.

\[ x + 1 = \sqrt{25 + 7x} \]
\[ (x+1)^2 = (\sqrt{25 + 7x})^2 \]
\[ x^2 + 2x + 1 = 25 + 7x \]
\[ x^2 - 5x - 24 = 0 \]
\[ (x-8)(x+3)=0 \]
\[ x-8=0 \quad \text{or} \quad x+3=0 \]
\[ x=8 \quad \text{or} \quad x=-3 \]

extraneous solution - check by substitution

4. Solve.

\[ \frac{15}{\sqrt{x}} = 5 \]
\[ 5\sqrt{x} = 15 \]
\[ (5\sqrt{x})^2 = (15)^2 \]
\[ 25x = 225 \]
\[ x = 9 \]

5. The velocity, \( v \), of a free-falling object can be found using the formula

\[ v = \sqrt{2gd} \]

where \( v \) is in meters per second, \( g = 9.8 \text{m/s}^2 \), and \( d \) is the distance in meters. Enter the distance a ball falls if the velocity is 17 m/s. Round your answer to the nearest tenth.

\[ 17 = \sqrt{2(9.8)d} \]
\[ 17 = \sqrt{19.6d} \]
\[ (17)^2 = (\sqrt{19.6d})^2 \]
\[ 289 = 19.6d \]
\[ 14.7 = d \]