**Radical and Rational Expressions and Equations Review**

1. Divide. Express your answer in simplest form.

**a)**  **b)** *x* > 0

2. Multiply using the distributive property. Simplify the expression.



3. Rationalize the denominator. Simplify.

**a)**  **b)**  **c)** 

4**.** Solve and check.

**a)** **b)** 

5. John solves the equationHe determines two solutions: *x* = –2 and *x* = –5. Identify whether either of these values is extraneous.

6. A rectangle has a length of  and a width of . Find the simplified expression for the area of the rectangle.

7. Simplify. State any **non-permissible values. a)**  **b)**

8. Simplify **a)  b)** 

9. If a box has a volume of  and has a length of  and a width of . Determine the simplified expression that represents the height of the box.

10. Simplify. **a)** **b)**

11. Solve 

12. A tree’s radius can be given by the rational expression  where *x* is the number of years. A second tree’s radius is given by the rational expression . Determine the number years *x* when the two tree’s have the same radius.