

**Match the properties to the objects that can have them.**

**Properties:**

1. Be linearly independent.
2. Be consistent or inconsistent.
3. Have a unique solution or an infinite number of solutions.
4. Be invertible.
5. Be linear.
6. Be homogeneous.
7. Span all of  $\mathbb{R}^m$ .
8. Be one-to-one or onto.
9. Be row equivalent to the identity.
10. Have pivot positions.
11. Have only the trivial solution or non-trivial solutions.

**Objects:**

- a. A set of vectors, or the columns of a matrix.  
1, 7
- b. A matrix.  
4, 10
- c. A system of equations, or a matrix equation.  
2, 3, 5, 6, 11  
(11 only applies to a system of homogeneous equations)
- d. A transformation.  
4, 5, 8, 9