Directions: Answer the problems given below.

1. Let $A = \{1, 2, 3, 4, 5, 6\}$, and let R be the relation on A defined as follows:

$$\text{For every } x, y \in A, \; xRy \Leftrightarrow 4|(x^2 - y^2).$$

a. Write out the relation R as a set of ordered pairs.

$$\{ (1,1), (1,3), (1,5), (2,2), (2,4), (2,6),$$
$$(3,1), (3,3), (3,5), (4,2), (4,4), (4,6),$$
$$(5,1), (5,3), (5,5), (6,2), (6,4), (6,6) \}$$

b. Draw the directed graph of R.