Factor each of the following binomials, or state that they are prime (i.e. cannot be factored). Check your answers by multiplying all the factors back together.

1.
$$x^2 - 9$$

check:

2.
$$16 - 49w^2$$

check:

3.
$$w^2 + 4$$

check:

4.
$$25u^2 + 1$$

check:

5.
$$4a^4 - 64$$

check:

6.
$$8x^3 - 1$$

check:

7.
$$y^3 + 64$$

check:

8.
$$125c^3 + 27$$

check:

9.
$$x^3 - 1000$$

check: