

Factor each polynomial, if possible. If the trinomial cannot be factored, write *prime*.

1) $x^2 - 49$

2) $81 + 16k^2$

3) $-9r^2 + 121$

4) $144a^2 - 49b^2$

5) $3x^2 - 75$

6) $18a^4 - 72a^2$

7) $n^3 + 5n^2 - 4n - 20$

8) $x^4 - 16$

10) $9y^2 = 64$

11) $12d^3 - 147d = 0$

12) $x^3 - 4x = 12 - 3x^2$

13) $50 - 8a^2 = 0$

14) $25x^2 = 36$

Bonus: Solve the equation by factoring.

Check your solutions.

15) $36x - 16x^3 = 9x^2 - 4x^4$

Solve each equation by factoring. Check your solutions.

9) $12 - 27n^2 = 0$