

**Factoring polynomials**

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Name \_\_\_\_\_

Date \_\_\_\_\_

**Factor each.**

1)  $x^4 - 3x^2 - 40 = 0$

2)  $x^3 - 3x^2 - 4x = 0$

3)  $x^4 + 9x^2 + 20 = 0$

4)  $x^6 - 63x^3 - 64 = 0$

5)  $x^6 - 1 = 0$

6)  $x^4 - 12x^2 + 36 = 0$

7)  $x^4 + 7x^2 + 12 = 0$

8)  $x^3 + 4x^2 + 2x + 8 = 0$



## Answers to

- 1)  $(x^2 - 8)(x^2 + 5) = 0$     2)  $x(x + 1)(x - 4) = 0$     3)  $(x^2 + 5)(x^2 + 4) = 0$   
4)  $(x + 1)(x^2 - x + 1)(x - 4)(x^2 + 4x + 16) = 0$     5)  $(x - 1)(x^2 + x + 1)(x + 1)(x^2 - x + 1) = 0$   
6)  $(x^2 - 6)^2 = 0$     7)  $(x^2 + 4)(x^2 + 3) = 0$     8)  $(x + 4)(x^2 + 2) = 0$

