

## Pre-Algebra

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### Factoring Practice

Factor out the GCF.

1.  $3x^3 + 12x^2$

2.  $16b - 12ab$

3.  $20x^6 + 10x^5 - 15x^3$

Factor into two binomials.

4.  $x^2 + 8x + 15$

5.  $x^2 + 6x - 7$

6.  $x^2 + 12x + 27$

7.  $x^2 + 12x + 35$

8.  $x^2 + 2x - 3$

9.  $x^2 + x - 12$

10.  $x^2 - 10x + 21$

11.  $x^2 + x - 20$

12.  $x^2 - 9x + 14$

13.  $x^2 - 49$

14.  $16x^2 - 25$

15.  $25x^2 - 49$

16.  $81x^2 - 100$

17.  $4x^2 - y^2$

18.  $a^4 - 4$

19.  $36x^2 - 25$

20.  $121a^6 - 9b^2$

21.  $x^{10} - 1$

### Multiple Choice

22. Which expression is a factor of  $x^2 + 5x - 24$ ?

- a.  $(x + 4)$                       b.  $(x - 4)$   
c.  $(x + 3)$                       d.  $(x - 3)$

23. Expressed in factored form, the binomial  $4a^2 - 9b^2$  is equivalent to which product?

- a.  $(2a - 3b)(2a - 3b)$   
b.  $(2a + 3b)(2a - 3b)$   
c.  $(4a - 3b)(a + 3b)$   
d.  $(2a - 9b)(2a + b)$

24. What are the factors of  $x^2 - 10x - 24$ ?

- a.  $(x - 4)(x + 6)$     b.  $(x - 4)(x - 6)$   
c.  $(x - 12)(x + 2)$     d.  $(x + 12)(x - 2)$

25. If  $3x$  is one factor of  $3x^2 - 9x$ , what is the other factor?

- a.  $3x$                               b.  $x^2 - 6x$   
c.  $x - 3$                           d.  $x + 3$

### **FACTORING CHALLENGE**

**Factor each polynomial into two binomials. Double distribute to check your work.**

a)  $225x^{14} - 400y^{12}$

b)  $x^2 - 18x - 144$

c)  $3x^2 + 10x - 8$