

## 2.8 Practice B

In Exercises 1–4, factor the polynomial by grouping.

1.  $a^2 - 3a + ab - 3b$

2.  $m^2 + 7mn + 2m + 14n$

3.  $t^2 - 4t + tv - 4v$

4.  $3x^2 - 4x + 9xy - 12y$

In Exercises 5–10, factor the polynomial completely.

5.  $45y^4 - 20y^2$

6.  $8w^5 - 48w^4 + 72w^3$

7.  $p^3 - 3p^2 - 16p + 48$

8.  $12z^2 - 6z + 42$

9.  $-21h^4 + 77h^3 + 28h^2$

10.  $x^3 + 2x^2 - 49x - 98$

In Exercises 11–14, solve the equation.

11.  $p^3 + 2p^2 - 9p - 18 = 0$

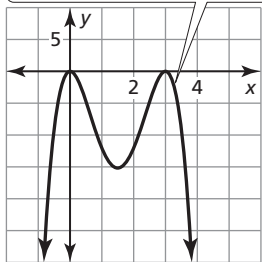
12.  $3y^4 + 9y^3 - 120y^2 = 0$

13.  $36t - 4t^3 = 0$

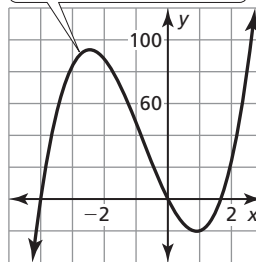
14.  $3q^3 - 5q^2 - 27q + 45 = 0$

In Exercises 15 and 16, find the  $x$ -coordinates of the points where the graph crosses the  $x$ -axis.

15.  $y = -3x^4 + 18x^3 - 27x^2$



16.  $y = 6x^3 + 14x^2 - 40x$



17. A rectangular box has a volume of  $72x$  cubic inches. The width of the rectangular box is  $x$  inches, the length is  $3x$  inches, and the height is  $(3x - 1)$  inches.

- Write a polynomial that represents the volume of the rectangular box.
- What are the dimensions of the rectangular box?

In Exercises 18 and 19, factor the polynomial completely.

18.  $5x^2 + 35xy - 2x - 14y$

19.  $5p^3 + p^2q - 15pq - 3q^2$