

1.6 Practice Set

1. How do you factor a difference of two cubes? Give an example.

Write each of the following expressions as either a perfect square or a perfect cube.

2. $16y^{10}$

3. $64x^9$

4. $27z^{21}$

Factor each of the following binomials completely. If the binomial is prime, say so.

5. $y^2 - 9$

6. $\frac{1}{16} - 4z^2$

7. $32r^2 - 72$

8. $(s + 3)^2 - 25$

9. $x^3 + 27$

10. $z^3 - 125$

11. $8r^3 + s^3$

12. $9x^4 - xy^3$

13. $27x^3y^2 - 64y^5$

14. $24x^3 + 81z^3$

15. $28x^2y - 63y$

16. $x^6 - y^6$

17. $a^2 + 2ab + b^2 - z^2$

18. $32x^4y^2 - 4xy^5$

$$19. \quad x^2 - 28xy + 144y^2 - 25z^2$$

$$20. \quad (m + n)^3 + 8$$

Distributed Practice Problems

Factor each of the following polynomials completely. If the polynomial is prime, say so.

$$21. \quad 10y^4 + 26y^3 + 24y^2$$

$$22. \quad 3x^2 + 3xy - 4x - 4y$$

$$23. \quad 25x^3 - 75x^2 - x + 3$$

$$24. \quad 4s^2 + 8s - 60$$

$$25. \quad 7y^2 - 63$$

$$26. \quad 4x^6y - 32x^3y$$

$$27. \quad x^3 - 81x$$

$$28. \quad 7x^3 - 7x^2 - 42x$$

Solve each of the following equations for the indicated variable.

$$29. \quad \left| \frac{x}{3} + 5 \right| = 2$$

$$30. \quad r = ab - 4ac^2 \text{ for } a$$