

3.4 Practice B

In Exercises 1–6, factor the polynomial completely.

1. $5t^5 - 320t^3$
2. $2p^6 - 26p^5 + 84p^4$
3. $3x^4 - 432x^2$
4. $5a^6 - 16a^5 - 45a^4$
5. $12j^9 - 28j^8 + 15j^7$
6. $15q^{10} + 38q^9 + 24q^8$

In Exercises 7–9, factor the polynomial completely.

7. $2p^9 - 16p^6$
8. $25k^8 + 1600k^5$
9. $54w^7 - 16w^4$

In Exercises 10–13, factor the polynomial completely.

10. $x^3 - 7x^2 + 5x - 35$
11. $m^3 - 2m^2 - 16m + 32$
12. $9w^3 - 27w^2 - 4w + 12$
13. $25s^3 + 100s^2 - s - 4$

In Exercises 14–16, factor the polynomial completely.

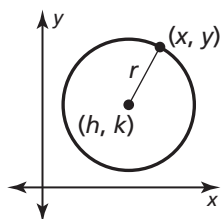
14. $81g^4 - 625$
15. $2t^8 + 6t^5 - 20t^2$
16. $5v^{10} - 25v^6 + 30v^2$

In Exercises 17–20, determine whether the binomial is a factor of $f(x)$.

17. $f(x) = 4x^3 - 15x^2 - 30x + 25$; $x - 5$
18. $f(x) = 2x^3 + 16x^2 - 4x - 50$; $x + 7$
19. $f(x) = 8x^5 + 43x^4 - 58x^3 + 60x^2 - 70$; $x - 4$
20. $f(x) = 42x^4 + 143x^3 + 37x^2 - 27x + 45$; $x - 2$
21. Fill in the blank of the divisor so that the remainder is 0. Justify your answer.

$$f(x) = 2x^3 + 7x^2 - 4x; (x + \underline{\quad})$$

22. The standard equation of a circle with radius r and center (h, k) is $(x - h)^2 + (y - k)^2 = r^2$. Rewrite the equation of each circle in standard form. Identify the center and radius of the circle. Then graph the circle.



- a. $x^2 + 8x + 16 + y^2 = 9$
- b. $x^2 - 10x + 25 + y^2 = 4$
- c. $x^2 - 4x + 4 + y^2 + 6y + 9 = 16$