

Simplify:

1. $3xy^2 + 13xy - 12xy^2 - 8x + 6xy^2 - xy$

2. $(3x^2 + 3x - 5) - (x^2 - 3) + 2(x^2 + 5x)$

3. $(3x - 2)(3x + 1)$

4. $(3x - 2)(2x^2 - 5x - 2)$

5.
$$\frac{14x^4y^2 - 9x^3y + 12x^2y}{6x^3y^2}$$

6.
$$\frac{18x^4 - 15x^3 - 48x^2}{24x^3}$$

Complete the **long** division.

7.
$$\frac{4x^3 + 2x^2 + 6x - 5}{2x - 3}$$

8.
$$\frac{x^3 - 16}{x - 2}$$

Use **synthetic division** to complete problems 9 to 11.

9.
$$\frac{5x^3 - 2x^2 + 2x - 3}{x - 2}$$

10.
$$\frac{5x^4 + 2x - 3}{x + 1}$$

11. Find $f(-5)$ if $f(x) = 4x^5 + 16x^4 - 15x^3 + 26x^2 + 7x + 1$ and $x = -5$

Factor completely.

12. $45x^4 - 20x^2$

13. $25x^2 - 9y^2$

14. $2x^2 - 18x + 28$

15. $x^2 - 13x - 48$

16. $3x^2 - 4x - 4$

17. $6x^2 - 11x - 10$

Factor completely.

18. $24x^3 - 46x^2 + 10x$

19. $x^3 + 8$

20. $8x^3 - 27$

Solve for x. Circle your answers:

21. $2x^2 = 12x$

22. $64x^2 - 25 = 0$

23. $x^2 - 18x + 80 = 0$

24. $x^2 = 7x + 18$

25. $14x^2 - 3x - 2 = 0$

26. $(x - 2)(x + 3) = 14$

Answers to Chapter 4 Review Test:

1. $-3xy^2 + 4xy$

2. $4x^2 + 13x - 2$

3. $9x^2 - 3x - 2$

4. $6x^3 - 19x^2 + 4x + 4$

5. $\frac{7x}{3} - \frac{3}{2y} + \frac{2}{xy}$

6. $\frac{3x}{4} - \frac{5}{8} - \frac{2}{x}$

7. $2x^2 + 4x + 9 + \frac{22}{2x-3}$

8. $x^2 + x + 4 - \frac{8}{x-2}$

9. $5x^2 + 5x + 18 + \frac{33}{x-2}$

10. $5x^3 - 5x^2 + 5x - 3$

11. $f(-5) = -9$

12. $5x^2(3x+2)(3x-2)$

13. $(5x+3y)(5x-3y)$

14. $2(x-7)(x-2)$

15. $(x+3)(x-16)$

16. $(3x+2)(x-2)$

17. $(3x+2)(2x-5)$

18. $2x(3x-5)(4x-1)$

19. $(x+2)(x^2-2x+4)$

20. $(2x-3)(4x^2+6x+9)$

21. $x=0$ or $x=6$

22. $x = \frac{5}{8}$ or $x = \frac{-5}{8}$

23. $x=10$ or $x=8$

24. $x=-2$ or $x=9$

25. $x = \frac{1}{2}$ or $x = \frac{-2}{7}$

26. $x=-5$ or $x=4$